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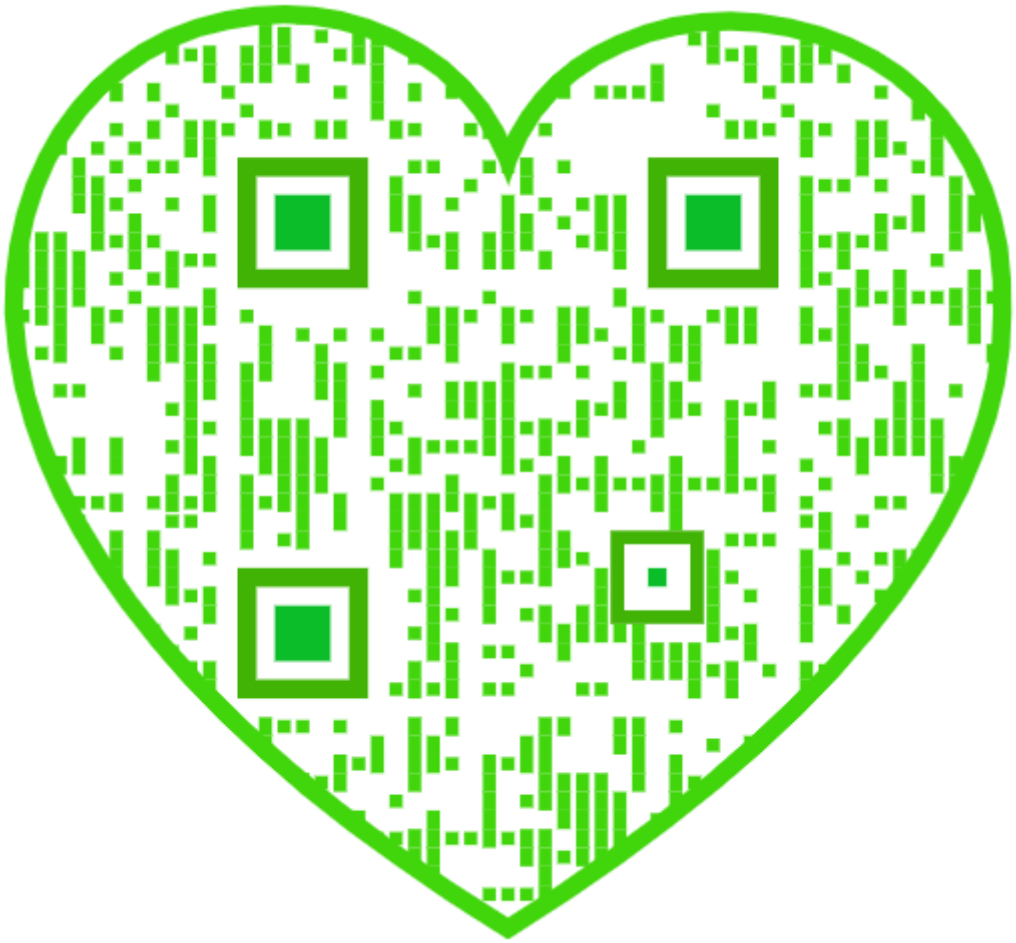
Practical Home Veterinarian

DAVID ROBERTS, D.V.S.



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DR. DAVID ROBERTS' PRACTICAL HOME VETERINARIAN

TWELFTH EDITION

Revised to 1913

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By DAVID ROBERTS D, V. S.

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Dr. David Roberts Starting Out on a Special Dairy Train.

Dr. David Roberts Addressing Live Stock Breeders on Diseases of Cattle from Special Dairy Train.

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Dr. David Roberts' Practical Home Veterinarian

A BOOK CONTAINING

much valuable information on the care and treatment of Cattle, Horses, Swine, Sheep and Poultry, and a review in alphabetical order of the diseases to which they are subject, together with the causes and symptoms, and the most efficient medicines for each. Also illustrations of a model dairy barn, different breeds of cattle and horses, and modern methods of administering treatment.

Written and Compiled by
DAVID ROBERTS, D. V. S.
WAUKESHA, WIS.

Dr. David Roberts

Former State Veterinarian of Wisconsin

Author of "Practical Home Veterinarian"

Official Veterinarian
"National Dairy Show"—1909, 1910, 1911, 1912.

Official Veterinarian
"International Dairy Show"—1911, 1912

Official Veterinarian
"Iowa Dairy Convention and Cattle Congress"—1910, 1912.

Official Veterinarian
"American Royal Livestock Show"—1908.

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Teat Bistoury.
Teat Expander.
Teat Plug.
Womb Dilator.
Womb Sound.

LIST OF DR. DAVID ROBERTS' PREPARED PRESCRIPTIONS

ANTI-ABORTION, for preventing and stamping out abortion in cows.
ANTISEPTO (powdered), for washing the genital organs of live stock.
ANTISEPTO (liquid), for washing genital organs of cattle in treating abortion.
ANTISEPTIC POULTICE, for poulticing swollen and inflamed parts (man or beast).
ABSORBENT, for lump jaw, removing enlargements, and healing wounds.
BADGER BALM, for sore teats and inflamed udder of cattle.
BLACK LEG VACCINE, for vaccinating calves to prevent black leg.
BONE BLISTER, for bone spavins, curbs, ring bones, splints, lump jaw, etc.
BREEDING TONIC, to tone genital organs and overcome barrenness in live stock.
COW CLEANER, for expelling the afterbirth of cows and heifers.
CALF MEAL, added to skim milk, is a substitute for whole milk.
CALF CHOLERA REMEDY, to prevent and overcome scours in live stock.
COW TONIC, for loss of appetite, and to increase the flow of milk.
COLIC DRENCH, for spasmodic or wind colic, also water trouble in horses.
DISINFECTALL, destroys germs, prevents diseases, abortion, tuberculosis, etc.
DIOLICE, for destroying lice on live stock in summer or winter.
EYE LOTION, for sore and inflamed eyes of live stock.
FEVER PASTE, for distemper, coughs, colds, throat and lung troubles of live stock.
FLY OIL, absolutely protects live stock from flies and mosquitoes, day or night.
FLUSHING OUTFIT, for giving injections to live stock, and washing genital organs.
GALL BALM, for collar, harness and saddle galls, or irritated skin.
GERM KILLER, for washing deep seated or superficial wounds and abscesses.
HEAVE POWDER, for heaves, asthma, broken wind, and irregular breathing.
HARD MILKING OUTFIT, to dilate teat ducts and overcome hard milking.
HORSE TONIC, to aid digestion, purify the blood and sleeken the coat.
HEALING OIL, for soothing and healing superficial wounds.
HEALING LOTION, for healing old sores and pus cavities, fistula, poll evil, etc.
HOOF REMEDY, for growing new hoofs and overcoming contraction.
HOG TONIC, for overcoming and preventing diseases and worms in swine.
HORN KILLER, for preventing the growth of horns on calves.
KIDNEY AID, for overcoming kidney disease, such as azoturia and red water.
LAXOTONIC, for constipation and paralysis of the bowels of live stock.
LUCKY FOUR BLISTER, a penetrating and stimulating blister.
MILK FEVER OUTFIT, to prevent and overcome milk fever in cows.
MEDICATED SALT, prevents disease and rids live stock of worms.
PHYSIC BALLS, for stimulating unthrifty, wormy and hide-bound horses.
POULTRY TONIC, to make hens lay, overcome and prevent poultry diseases.
POULTRY CHOLERA MEDICINE, for preventing and overcoming poultry cholera.
POULTRY ROUP PASTE, for preventing and overcoming roup in poultry.
POULTRY LOUSE POWDER, for destroying lice on poultry.
STOKVIGOR, for making your own stock tonic at home.
SKIN OINTMENT, for all skin diseases, such as mange, ring worm, etc.
STOKDIP, for dipping live stock and preventing diseases.
SHEEP TONIC, to aid digestion, prevent diseases, and expel worms.
TUBERCULIN, for detecting tuberculosis in cattle.
TUBERCULIN OUTFIT, includes instruments for applying test.
UMBILICURE, for preventing navel diseases in colts and calves.
VIGORINE, for stimulating the genital organs of live stock.
WARTINE, for removing warts from the body or limbs of live stock.
WHITE LINIMENT, for muscular soreness and rheumatism, in man or beast.
WORM POWDER, for destroying and expelling worms from live stock and poultry.

INTRODUCTORY

HE only way by which the farmer, dairyman, poultryman or live stock owner can realize the most from his investment and his labor is by continually guarding the health and welfare of his live stock as a precautionary measure, and by employing the most advanced prescriptions and discoveries in eradicating disease as soon as it appears. It is the object and purpose or this book to present in clear, concise and simple language, facts with which every farmer and cattle owner should be acquainted. It gives you a brief history of the most important farm animals; also interesting statistics. It tells you how to care for and manage your live stock; how to keep them in good condition so as to always produce the best results; how to prevent disease; how to know disease when it does appear, and lastly, how to treat and overcome disease. The precautionary measures, to start with, are absolute cleanliness, with conditions and surroundings as sanitary as possible. Then it is necessary at all times to have on hand a sufficient supply of good disinfectants, with which to destroy parasites and germs of all kinds, which multiply so rapidly and exist everywhere, especially where cleanliness is neglected.

In this book we make mention of the different diseases to which live stock is subject, and we treat at some length on those for which we have positive, tried and tested prescriptions. We make note of other diseases for which we do not claim to have a prepared prescription, and these subjects may be taken up by correspondence direct with Dr. David Roberts, who will give each and every inquiry his careful and personal attention. In regard to the prescriptions which are offered in this book, we wish to say that they are the result of thousands of experiments and the experience of over twenty-two years of active veterinary practice in the richest dairy cattle section of the United States. Exceptional opportunities have been offered Dr. Roberts for studying the cause and effect of such complicated and persistent diseases as Abortion, Barrenness, Retention of the Afterbirth, Scours in Calves, etc., and on such subjects he is a recognized authority, as hundreds of unsolicited testimonials will prove.

Abortion, for instance, is a germ disease; the germ is found in the mother's blood, afterbirth and bowels of the fœtus, and such conditions can only be corrected by the hypodermic injection of such medicines as will destroy and eradicate the germ and thus restore the animal to a healthy condition.

We make mention of this to illustrate that the treatment and prescriptions for these diseases are the subject of much scientific study, and cannot be successfully handled except by a man of much experience and practice. These things cannot be learned from books. The knowledge must be acquired from the most thorough and successful masters—Experience and Practice. Dr. Roberts,

in his daily practice, administers with unequalled success exactly the same prepared prescriptions which are offered you here, and with his letter of advice and instructions you can accomplish in your herd the same wonderful results with which he meets wherever he is called. The prescriptions here offered, in addition to being used by Dr. Roberts in his practice, have been used to a great extent by live stock owners throughout the country, and have met with marked success. For this reason it is our purpose to now introduce them to every owner of live stock in America, and if you should give them a trial and find them to do what we claim, it would be a move in the right direction and a boon to suffering animal kingdom if you would recommend them to your friends and neighbors.

With the above remarks we will close our introductory chapter, and would request that you read carefully the following pages, which we are certain will result to your benefit.

We hope after reading this book we will have convinced live stock owners that after all has been said on the subject, the fact cannot be denied that to guard and protect the health and comfort of your animals is, and truly is, "The Only Way."

DR. DAVID ROBERTS' VETERINARY CO.,
DR. DAVID ROBERTS, *President.*

Fac-similie of Dr. David Roberts' Diploma from Chicago Veterinary College.

BIOGRAPHICAL SKETCH

Dr. David Roberts has for years occupied a conspicuous place among the veterinarians of the United States. Gov. Davidson appointed him State Veterinarian of Wisconsin in 1906, in which office he succeeded his brother, Dr. Evan D. Roberts, of Janesville, Wis., who had held the office for six years. Dr. David Roberts ably filled this position until November 1, 1908, when he resigned in order to conduct an educational campaign against the two dread diseases in cattle—tuberculosis and abortion. This campaign was not confined to Wisconsin, but was extended to Iowa, Illinois, Pennsylvania, New York, and other states, and as a result infectious diseases have been stamped out from among many valuable herds in all parts of the country.

For generations back the Roberts family has been interested in the breeding and treating of live stock. Twenty-five years before any veterinary college had been established in America, J. P. Roberts, the grandfather of Dr. David Roberts, was engaged in treating horses and cattle. His father, John M. Roberts, was a well-known stock raiser and farrier, his service being in demand even at the present time, owing to his experience and good judgment.

It will thus be seen that Dr. David Roberts was, in a measure, born in this profession.

During the early part of Dr. Roberts' life he attended the district school, and later entered Beloit College. Returning from Beloit he successfully managed his father's stock farm with its extensive milk interests and a side line of draft horses, hogs and sheep. His great love of stock, and the success which attended his every effort with them, persuaded him to enter the Chicago Veterinary College in order to fit himself for the profession for which he was naturally gifted.

In 1889 Dr. David Roberts was graduated from the Chicago Veterinary College, and his desire of becoming a cattle specialist induced him to leave the larger cities and locate in the beautiful city of Waukesha, which is in the very heart of the large dairy industry of this great state, where he has since 1889 enjoyed a large practice. While he has devoted his time to the general practice of the Veterinary Science, still it must be understood that he is eminently a

CATTLE SPECIALIST,

and as such is far more competent to handle and treat the complicated diseases of cattle than one who has not paid particular attention to this line of work. On account of the magnitude of the cattle industry in this country, the Doctor places this branch of the practice ahead of all others, and it is with pardonable pride that we refer to his magnificent success in this field.

In the discovery of the Anti-Abortion Treatment, Dr. Roberts has rendered a service of the highest importance to the cattle industry of the world. It is a matter of great interest to owners and breeders of live stock, that this Treatment, along with numerous other scientific prescriptions that he has employed with such remarkable success in his extensive practice, have been placed on the market in such form as to be readily available.

The Doctor has built up the largest cattle practice in the country, and is prepared to visit any part of the United States on important cases, details of such trips to be arranged with him by correspondence.

TO THE VETERINARY PROFESSION.

No one is in a better position than the veterinarian to realize the extensive loss resulting to live stock owners throughout the country from Contagious Abortion in cattle, and the great need of a reliable treatment for this destructive disease.

That contagious diseases are caused by germs is admitted by nearly all persons who are at all conversant with what has been done in the world of veterinary science during the last few years.

Contagious Abortion, Calf Cholera, Tuberculosis and several other diseases of infectious forms are known to be caused by the presence of germs, which differ in form, size, mode of growth and microscopic appearance.

By means of these germs we can transmit these diseases from one animal to another, and by taking a small quantity of liquid from a cow afflicted with Contagious Abortion, and injecting it under the skin of a pregnant guinea pig, it will cause her to abort, and if other pregnant guinea pigs be in the same pen they will also abort.

I merely mention this experiment to show the infectious nature of germs of abortion, which produce this disease in cattle.

In the light of such proof, and in accordance with the acknowledgment of the scientific world, the only proper way to control and combat abortion is by the proper administration of an Anti-Abortion Treatment, such as I have perfected.

After many years of careful study and numerous experiments with this treatment, I have been enabled to control and eradicate this disease.

I know that the use of Anti-Abortion treatment in preventing and overcoming infectious diseases in stock is the correct method. In view of this, I shall exert strenuous efforts to remain in the front rank of scientific and practicable development in this work.

As yet I confine the output of this treatment to Contagious Abortion in cattle only, and do not advise its use on other stock until proved beyond all doubt that it is absolutely reliable in their cases as it is in cattle.

Its wonderful effects can best be seen by injecting it under the skin of a cow which is showing every sign of an approaching abortion (such as swelling of the udder and vulva) then watch these symptoms disappear and the cow carry her calf full time. You will then become an eye witness of what power of control the Treatment has over the germs that produce the symptoms, and if not disturbed, produce abortion in such a case.

In my complete treatise on page 35, I have endeavored to present the facts in such a light that every one who reads it may get a comprehensive idea of what is meant by the treatment of Infectious Abortion in cattle.

I have purposely avoided technicalities as much as possible, choosing rather to present scientific facts in a clear and intelligible manner.

I believe that when veterinarians familiarize themselves with the treatment, and the results which they can obtain by the use of the same, that they will in time become constant users of this, the most scientific and professional method of handling this dreaded disease which is costing their clients many hundreds of dollars yearly.

The newest and most improved methods are used in preparing the Anti-Abortion Treatment. Before being shipped, it is carefully examined, in order to establish its correctness in every particular.

Yours very truly,

David Roberts D.V.S.

DEPARTMENT OF FREE ADVICE

We have a thoroughly equipped organization, all under the direct supervision of Dr. David Roberts, and with the systematic arrangement of our work we can handle an unlimited amount of correspondence. We invite Farmers, Dairymen, Poultrymen, Livestock Owners and Veterinarians to write Dr. Roberts on any subject pertaining to live-stock, and you will receive a prompt, courteous and satisfactory reply by return mail, which may be of benefit to you and save you many dollars.

You may consider this a somewhat philanthropic proposition, but we feel that we shall be fully compensated for the cost and labor of such correspondence and free advice rendered, by the value of the introduction to you and consequent acquaintance, which may result in an indirect benefit to us. We know that with this book in your possession you will find frequent occasion to refer to it, and the result of such reference may prove to our mutual benefit. We believe that there are many important things that you would like to know from time to time about your live-stock. The only trouble is, you don't know to whom to apply. Now, write Dr. Roberts all about the difficulties you are experiencing with your live-stock, enclose a two cent stamp for return postage, and your letter will have the confidential and prompt attention of this great Specialist. Remember, that the advice he will give you will be free of charge. From the doctor's superior knowledge and vast experience he can surely suggest a solution of your problems, and we know that the reply will be satisfactory and profitable to you.

DR. DAVID ROBERTS' VETERINARY CO.,
500 Grand Ave., Waukesha, Wis.
DR. DAVID ROBERTS, *President.*

HOW TO EXAMINE A SICK ANIMAL.

First take the temperature of the animal, by placing a self-registering Veterinary Fever Thermometer into the rectum, allowing it to remain there from three to five minutes. The normal temperature of a cow is 101 degrees (Fahrenheit) and the normal temperature of a horse is 100 degrees; hog, 100 degrees; sheep, 101 degrees.

Second, take the pulse of the animal, which can be found at the angle of the lower jaw bone, where it can be felt by pressing the artery against the bone. The normal beat of a cow's pulse is from 40 to 50 per minute, and that of a horse from 33 to 40 per minute.

Third, count the respirations of the animal, or number of times it breathes, by watching the sides or flanks or by pressing the ear to the sides. The normal respiration of a cow is from 15 to 20 per minute, and that of a horse from 12 to 15 per minute, while resting.

If the temperature, pulse or respiration are found to be higher or faster than the above described, you will know that the animal is ailing.

THE CARE AND TREATMENT OF A SICK ANIMAL.

IMPORTANT.

Place the sick animal in a well disinfected, ventilated and dry box stall with plenty of bedding and sunlight. (Avoid draughts.) In cold weather put a blanket on, feed sparingly of digestible food, such as bran mashes made with linseed tea. Keep manger sweet and clean. Water should be pure and clean, and warmed when necessary. (Always necessary for new milch cows.)

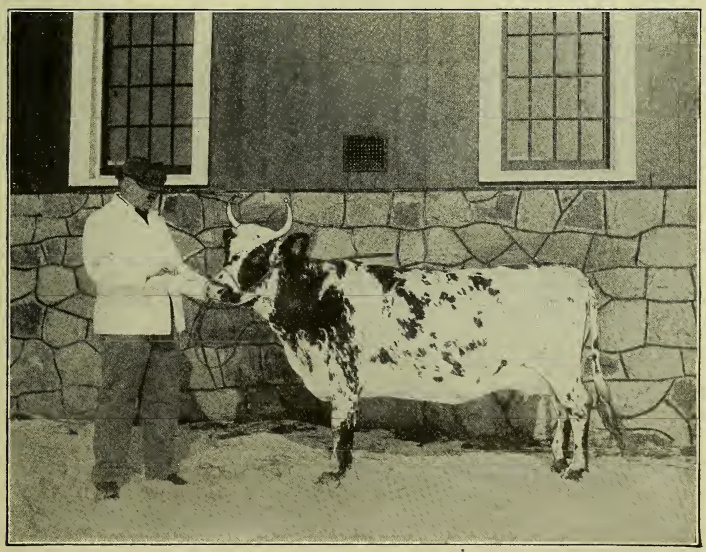
An injection of warm water per rectum should be given to nearly all sick animals, excepting those afflicted with looseness of the bowels.

NEVER DRENCH CATTLE.

More cattle die from the effects of being drenched than from tuberculosis.

Reasons Why.

If a cow's head be raised as high as possible and her mouth kept open by the drenching bottle, or horn, a portion of the liquid given her is very apt to pass down the wind-pipe into the lungs, sometimes causing instant death by smothering; while at other times death follows in a few days from resulting congestion or inflammation of the lungs. Perhaps the best way of demonstrating the danger of drenching cattle is to advise the reader to throw back his head as far as possible and attempt to swallow. He will find this a difficult task, but he will find it much more difficult, if not impossible, to swallow with his mouth open. It is for this reason that drenching cattle is a dangerous practice.



How to Give a Cow Medicine.

HOW TO GIVE A COW MEDICINE.

Give all cattle their medicine hypodermically or in feed; if they refuse feed, give it dry on the tongue.

The proper method of giving a cow medicine is to stand at her right side, place the left arm around her nose, or the left hand under her jaw, opening her mouth at the same time; then with a spoon in the right hand, place the medicine, which should be in paste or powdered form, back on the tongue, and she will swallow with safety. If large doses of liquid medicine are to be given, insert a probang, or half inch hose, about six feet long, and pass the same down the cow's gullet into her stomach, attach a funnel and pour in the liquid. For further particulars, read Dr. Roberts' articles on this subject in Kimball's Dairy Farmer of January 15 and March 1, 1911.

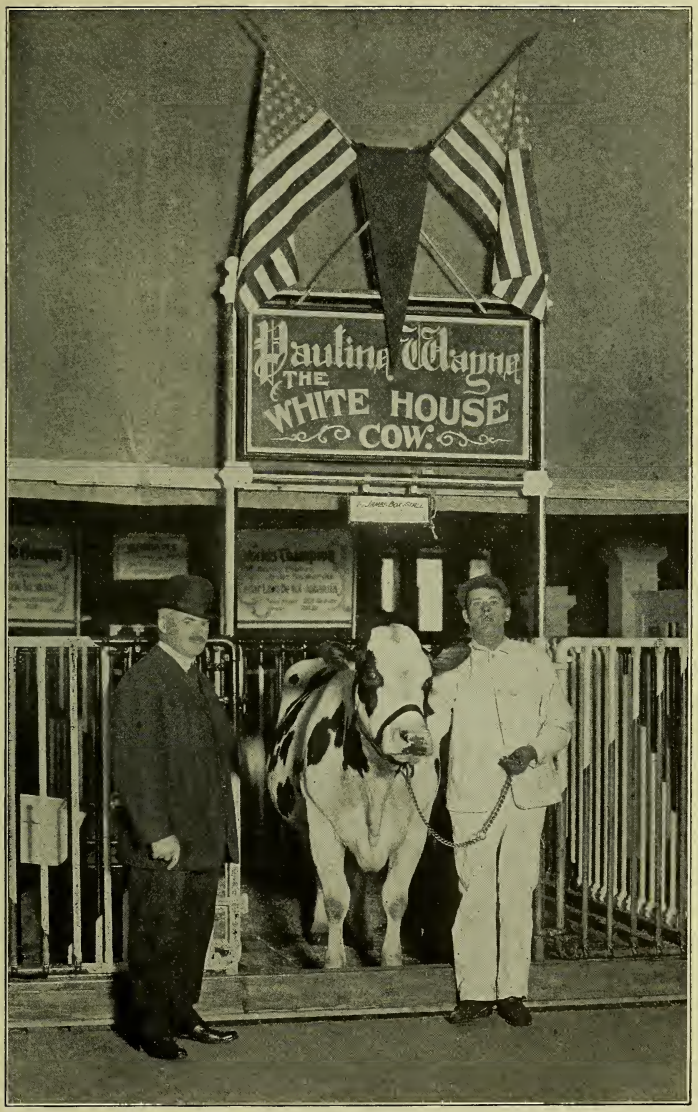
TABLE OF GESTATION.

Animal	Average Period	Early Period to Live	Late Period to Live
Cows	280 days	210 days	336 days
Mares	330 days	287 days	409 days
Sheep and Goats	150 days	140 days	160 days
Sows	115 days	105 days	125 days
Rabbits	30 days	.....	.....
Elephants	730 days	.....	.....

Method of Throwing Cattle.

Place a strong halter on a cow or bull and tie them securely about two feet from the ground or floor; take one-half inch rope, about 40 feet long, tie one end around the horns or to the top part of the halter; then pass the rope back and around the base of the neck, making a half hitch; then back again and around the animal's body, just back of the front limbs, again making a half hitch. Run the rope back and place it around the body, just in front of the hips, making another half hitch. In this manner the half hitches should be along the spine.

The attendant should then pull on the rope firmly and steadily. In a very short time the animal will go down without much of an effort on the part of the attendant. The animal can then be secured so as to prevent it getting up while being treated or operated on.



A Picture from the International Dairy Show.
Dr. David Roberts, of Waukesha, Wis., Official Veterinarian. The Taft Cow and Attendant.

CATTLE

History and Statistics of the Cattle Industry.

A Study of Breeds.

Care and Management of Cattle on the Farm.

Diseases of Cattle—How to Know Them—Method of Treatment.

Miscellaneous Information.

(See Complete Alphabetical Index, Pages 5 to 12.)

HISTORY AND STATISTICS.

The history of the various breeds of cattle with which we are familiar at the present time has been traced back many centuries.

It is reasonably certain that horned cattle first existed in a wild state, long before the dawn of recorded history, and in the Scriptures we find mention of the fact that Jubal, the son of Lemach, living in the time of Adam, is spoken of as "the father of such as own cattle."

It is a fact worthy of note that as man advanced beyond his primitive state, he found it necessary to domesticate certain wild animals for beasts of burden.

It is evident that the subjugation of wild cattle, not only for beasts of burden, but as means of bodily sustenance, first engaged the attention of primitive man as he struggled upward toward a higher plane of living.

We find that several wild varieties of the bovine tribe were originally widely disseminated in Asia and Europe.

From ancient writings and pictures we learn that these wild cattle were frequently the objects of chase by primitive hunters.

It is natural to infer that the animals in their adult state were slain for food, while the young were reduced to domesticity, and by confinement and care lost their wild instincts.

Ultimately these captive animals became fully domesticated, and as the herds increased, and were driven from place to place in search of fresh fields and new pastures, the people who made them captive became nomadic in character—their flocks and herds furnishing them an abundance of food, and the hides affording not only clothing, but shelter for the roving tribes.

The student of racial characteristics and of humanity's upward progress from savagery to civilization finds abundant evidence of the fact that domestic animals were a most important factor in that advancement.

In primitive America we find surprising confirmation of this fact.

In America, where no cattle existed prior to its discovery by the Europeans, and where there were no animals which were easily domesticable as beasts of burden, the Indians, though able folk, remained savages.

It is a fact worthy of note that the first shepherd and the first farmer were contemporaneous. Likewise, the keeping of live stock and grain growing have gone hand in hand down through the centuries.

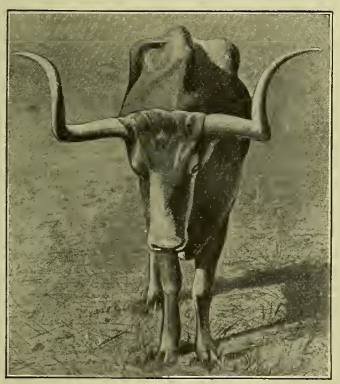
Every Celtic nation from the earliest period has raised cattle, and they have been regarded by all barbarians and pagan people as the greatest of the divine gifts to man.

With the progress of civilization, the least desirable breeds were exterminated, while the fittest survived in a state of domestication. Descendants of one of these ancient herds are still to be found in the Chillingham cattle of England. They are wild only because all possible means are used to keep them so. The wildest and less frequented tracts of two extensive parks are set apart for their use. These cattle are supposed to be descendants of the best of the ancient cattle of Great Britain.

Cattle were first brought to America by the Spaniards soon after its discovery by Columbus. As these bred and increased, the vast plains of Spanish America were covered with innumerable cattle. As these herds increased many of the cattle escaped and got away from civilization, living in a wild state and roaming over vast tracts of territory. As civilization has extended into new territory, these wild herds have gradually been brought under the hand of man or have been destroyed, and domestic cattle have taken their place, until at present there are practically no wild cattle in any section of the world.

The cattle which were originally to be found on the western plains and sections of the United States, came from the cattle brought to America by the Spaniards. These cattle were first almost in a wild state, and were only rounded up once or twice a year when the young were branded and the grown animals taken out for shipment.

There are still in the west many large herds of cattle which are kept out on the ranges and only brought up for the branding of the calves and the shipment of the matured stock. But as these western sections of the country are more thickly settled, these herds are gradually becoming smaller and the ranges are being fenced in so that the cattle are receiving more attention and are gradually being brought up to a higher grade.



Type of Original Spanish Cattle.

These Spanish cattle and their descendants are usually large in size, long legged, various in color, and their distinguishing characteristic is their long and widely extended horns.

The English settlers early introduced cattle in the colonies, bringing them from Great Britain.

In an early day the cattle in the United States were a mixture of various breeds imported by the early settlers, who, for want of good barns, and from habits established in a milder climate, allowed their cattle to suffer severely. Many perished and the survivors degenerated in size and quality. As agriculture advanced and the people became more prosperous the cattle were improved by better care and feeding.

As the English breeds gained celebrity, they attracted the attention of enterprising breeders in this country, who began importing the different breeds, and by strict attention and experience in care and breeding, have continued to improve the grade of cattle in this country, so that at the present time all progressive stock owners are introducing pure bred strains in their herds.

It would be interesting to trace the history of cattle, step by step, in their improvement from the earliest time, but from the facts which history gives it would be a hard matter to get any satisfactory information. The first systematic breeder of whom we have any record was Jacob. It is reasonably certain that he understood something of the principles of mating cattle, but did not use his understanding so much in the matter of improving the breed, or the good qualities for milking or beef, as he did in producing cattle of different colors.

This was with a view to securing a mingling of these colors in the offspring.

There have been many distinctive breeds of cattle known from the beginning of the historical era. Still, it is only within the last two centuries that any careful, systematic breeding has been attempted, and only within the last seventy-five years have greater results been accomplished and the greatest progress toward perfection been made.

STATISTICS OF THE CATTLE INDUSTRY.

The cattle industry of the United States is one of the greatest industries in the country. Statistics show that for a period extending over fifty years from 1850 to 1900 the number of cattle consumed by the American people has fallen from twenty-five to twenty for every one hundred of the population, the number consumed in 1850 being twenty-five for each one hundred, and in 1900 the number consumed was twenty for each one hundred.

During this time the number of cattle has increased largely, showing a loss during but one decade, which extended over the period from 1860 to 1870, covering the time of the Civil War in the United States.

In 1850 the cattle in this country numbered 18,000,000.
In 1860 the cattle in this country numbered 26,000,000.
In 1870 the cattle in this country numbered 24,000,000.
In 1880 the cattle in this country numbered 33,000,000.
In 1890 the cattle in this country numbered 42,000,000.
In 1900 the cattle in this country numbered 67,000,000.
In 1910 the cattle in this country numbered 69,000,000.

While the decades from 1870 to 1900 show a large average increase, the gain from 1900 to 1910 is very small. The gain made is due entirely to the increase of milch cows, for while these received an accession of 3,445,212, or 20.1 per cent, during this decade, other cattle show a loss of 2,381,184. The total value of all cattle increased during this period only because of the greater number and increased valuation of milch cows, their gain approximating $196,000,000. The average value of dairy cows increased during this decade from $29.68 to $34.24 per head.

During the period from 1890 to 1900 the milk production of this country shows an increase of almost 40 per cent in the total production. In 1890 the average amount of milk consumed each day by a family of five persons amounted to but little over one pint a day, while in 1900 the average consumption by a family of five persons amounted to one quart a day. This shows the per capita consumption doubled during a period of ten years. During this same period not only the quantity of milk is increased, but also the quality has been steadily improving, so that today one quart of milk contains much more nutriment than it did ten years ago. This increased production and improved quality is due not only to the increase in the number of cows in the country, but also to the improved methods of care and breeding.

The dairy productions of this country show a very marked increase from 1860 up to 1900. In 1860 they were valued at $240,000,000, increasing from that amount to $605,000,000 in 1900, being an increase of over two and one-half times in forty years.

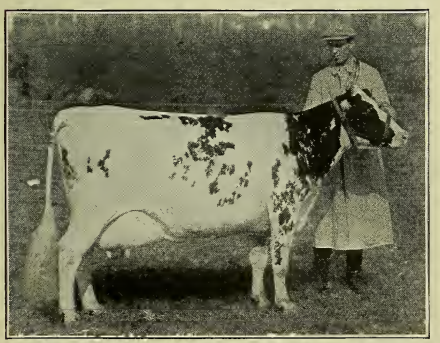
From 1900 to 1910 the increase has been very large.

In 1850 the amount of cheese produced annually in the United States amounted to but little over one hundred million pounds, which was four and one-half pounds per capita. Today the annual production is nearly three hundred million pounds, which is a little less than four pounds per capita. This shows an increase of nearly three times in total production, but a decrease of one-half pound per capita.

The statistics as to the production of butter are just the reverse of this, as the production of butter has risen from thirteen and one-half pounds to nineteen and one-half pounds per capita during this time.

These statistics only go to show the immensity of the cattle industry of this country, and the increase which has been made during the time which these statistics cover. That the cattle industry has increased to a marvelous extent is known to all, and it is a foregone conclusion that this increase must continue, as the demands for milk and its products, as well as beef, must increase largely with the better methods of living and the increase of the population. The increase must be not only in quantity, but there must also be an improvement in quality. The demand of the present day is for an improvement in everything, and the beef and dairy products cannot be behind the demands of the country. To meet these demands the stock raiser must bend his energies to improve his stock in every way, keeping them in a strong, healthy condition, caring for them in a proper manner, and endeavoring at all times to produce the best quality possible. At the present time there are 69,000,000 head of cattle in this country, consisting largely of the following breeds:

A STUDY OF BREEDS OF CATTLE.

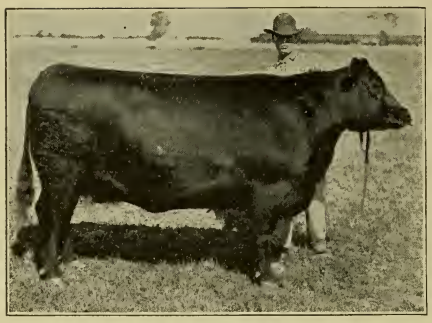


Ayrshire.

Ayrshire Cattle.

This breed of Scotch dairy cattle originated under the rugged conditions of Ayrshire, and in their type and general characteristic they exemplify the form and quality of animals required to make the most economical use of food, and do the best under conditions too severe for finer and more delicate cattle.

The fine cut features of the face, brightness of eye, upturned horn, thin neck, fine shoulders, good heart and lung capacity, straight back, strong loin, large abdomen (showing food capacity) long, broad hips, large evenly balanced udder, large well placed teats and well developed mammary glands, a soft, loose skin of medium thickness covered with a thick coating of fine hair, equal red and white, brown and white, or verging to nearly all white, are the chief characteristics of the breed in appearance. In temperament they are docile, yet in their whole bearing there is a noticeable alertness peculiar to no other breed.



Angus.

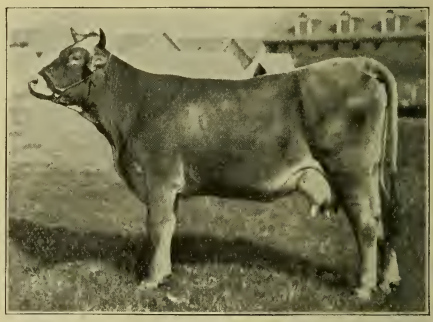
Angus Cattle.

The Angus, a beef breed, are natives of Scotland. They have no horns and are black in color, having a thick, short, but sleek coating of hair. They are handsome cattle and of splendid conformation.

They are not as large as some of the other beef breeds, but are profitable cattle to keep. While they are thrifty, they are not as hardy as the Galloway.

Brown Swiss Cattle.

The Brown Swiss, as their name indicates, come from Switzerland, and coming from such a mountainous country, are well adapted to grazing over rough and unbroken pastures. They are hardy and good size, and of a coarser build than other breeds. They give a good flow of milk of a fair percentage of butter fat.



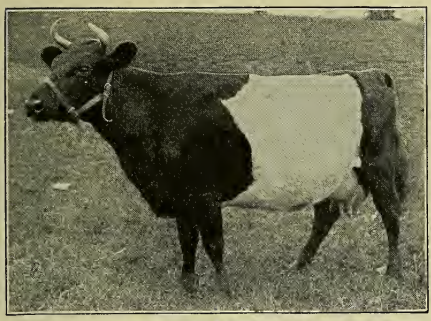
Brown Swiss.

Devon.

Devon Cattle.

Of all the breeds of cattle found in Great Britain, the Devons, which are a dark red in color, are among the purest and most ancient, and they are descendants of the same breeds as the Herefords and Sussex. They are called Devons for the reason that they originated in Devonshire.

They are smaller in size than the Herefords, Shorthorns, Galloways and the Sussex. They are noted for the quality rather than the quantity of their milk. They are symmetrical in form and very docile in disposition, and mature quickly. They produce an exceptionally fine quality of meat, as well as milk.



Dutch Belted.

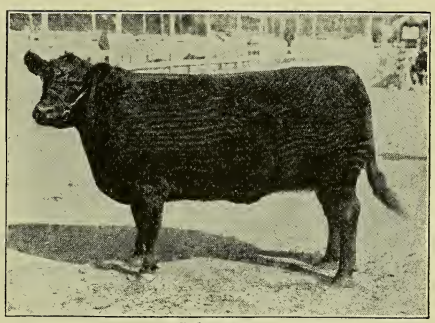
Dutch Belted Cattle.

Dutch Belted Cattle are a Holland dairy breed, and are so named from the white belt or band which encircles their body. They are now bred to a limited extent in this country, being kept in about twenty-five states in the Union. They are of medium size, black in color, with the exception of the white band or belt.

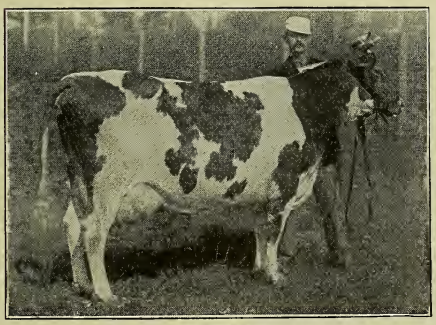
Galloway Cattle.

The Galloways, a beef cattle, natives of Scotland, are not as large in conformation as some of the other beef breeds and do not mature at such an early age. They have no horns, black in color, having a very long, coarse coat of curly hair, and are best adapted for rough and unbroken country and our colder climates.

This breed is being rapidly improved upon and are not only valuable as beef cattle but are exceedingly valuable for their hides, same being used for coats and robes.



Galloway.



Guernsey.

Guernsey Cattle.

The Guernsey cow originated on the Guernsey Island and is a very popular breed among dairy cattle.

This breed is quite distinguished, owing to its richness in color of hide. The milk and butter product is also of a natural, rich yellow color, which makes the Guernsey a very desirable breed in vicinities where there is a demand for such products.

The prevailing color of the Guernsey is white and red, shading into fawn.

Hereford.

Hereford Cattle.

The Herefords are natives of the shire of Hereford, in England. In color they are red, with white faces and breast, a white stripe along the back, and white legs and belly. They possess the same beef qualities as the Shorthorns, but are better grass cattle.

Holstein Cattle.

The Holstein-Friesian cattle are very nearly uniform in build, size, and quality, and for generations the natural conditions under which this breed have been kept have been the most favorable for the production of a milk breed, and are the most celebrated of the Holland cattle, they being regarded as the original stock.

The Holstein-Friesian, commonly termed the Black and White cow, is of splendid conformation. The head is long and rather narrow, eyes full, nose straight without flesh, nostrils large and well opened, mouth large and broad. The neck is long and fine, somewhat curved downward on top; brisket well set, withers and bag broad, with slightly sloping rump. The udder is of enormous size, extending well forward, where it has a squareness of form and is very broad. The teats are cylindrical in form, and usually from two and a half to three and a half inches in length.

Holstein.

Jersey.

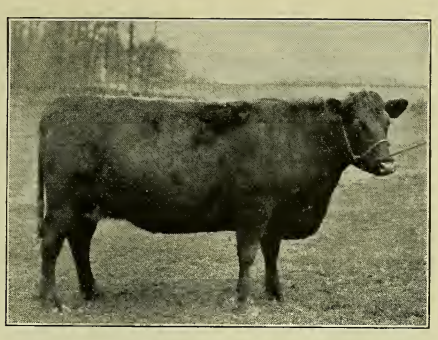
Jersey Cattle.

Jersey cattle come from the Jersey Island, off the coast of France. In color they are of different shades of fawn, some blending to white and others to black. They give very rich milk, which is especially adapted for butter-making. They cross well with other breeds of cattle for dairy purposes.

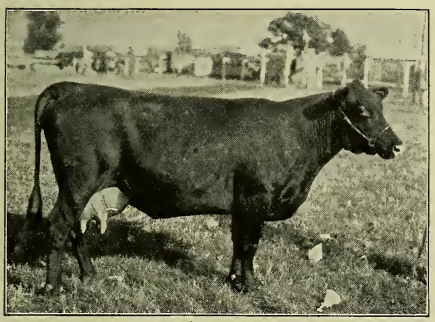
Polled Durham Cattle.

The Polled Durham descended from both the Scotch and English Shorthorns.

Polled Durhams are good beef animals, but the development has been largely in the direction of superior milking qualities. They are raised quite extensively in the middle states.



Polled Durham



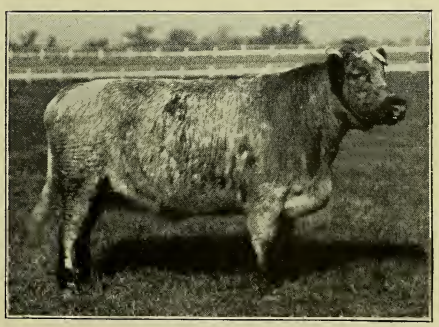
Red Polled.

Red Polled Cattle.

This breed of cattle is the result of a mixture of two types, which are known as Norfolk and Suffolk cattle. The Norfolk type was characterized by a blood red-colored body and mottled head, while the Suffolk type was originally a sort of mouse color. For over a century both have been freely intercrossed and have been recognized as one breed since 1846.

Shorthorn Cattle.

The Shorthorns are natives of England and Scotland, where they are still raised in large numbers. At the present time they are also extensively bred in America. They are red, white or roan in color, or may be spotted red and white. They are low down and blocky, with a good coating of flesh of good quality, and are one of the most popular breeds of Beef Cattle.



Shorthorn.

Kerry Cattle.

This is a pure breed, native of Ireland, and derived their name from the county of Kerry. They are very popular in some parts of England, but as yet have not been extensively introduced into the United States. The quality of their milk is rich, almost equal to that of Guernsey and Jersey in butter fat, and they give a large quantity of milk for their size.

Kerry.

An enthusiast on the subject of blooded stock, Dr. Roberts is at all times ready to give any further information that may advance this industry.

SELECTING A BEEF HERD.

In building up a herd for beef production, select cows with a broad, deep and square body, cows with a good coating of flesh, for these, if bred to the right kind of bull, will produce calves that will prove profitable feeders. Now for the bull. The bull is half the herd. He stamps his qualities on all calves—not simply on one calf a year, as with the cow.

Get a registered bull of the breed you want, even if you have only grade cows, as then you are sure you are getting a beef breed from beef ancestors. Select a bull that is of good size, with a proud masculine bearing, a good intelligent head, broad and full between the eyes, a short face, and strong, clear eyes, yet with a quiet expression, as a nervous, excitable animal will never fatten to good advantage.

He should be broad and straight across the back, with smooth, even hips. He should have well sprung ribs, heavily covered with flesh.

Cows should be bred so as to drop their calves in the early spring, and then when the cows are turned to pasture the calves will be old enough to go with them thus giving them the advantage for making a rapid growth and requiring very little attention during the busy summer months.

When the calves are a few weeks old, those not intended for breeding purposes, should be castrated and the wound washed with germ killer to prevent infections.

In the fall the calves should be weaned and fed on good, nutritious food.

This should consist of silage and roots, clover or alfalfa hay, corn, oats and bran—with daily allowance of some reliable Tonic to aid digestion and promote a quick growth.

The age at which steers should be marketed depends largely on the market prices, but as a rule well fed steers sell best at 14 to 16 months old. But if you do not wish to dispose of your product as beef, then you should choose one of the dairy instead of beef breeds of cattle.

SELECTING A DAIRY HERD.

The principal dairy breeds are Holstein, Guernsey, Ayrshire, Jersey, Brown Swiss, Dutch Belted, Devon, Polled Durham, Red Polled, etc.

There are several other dairy breeds, such as the French Canadian, Kerry and Sussex, etc., but these are rather scarce at present.

In buying dairy cattle we have a different standard to go by than in selecting a beef animal.

A dairy cow is a machine that turns feed into milk and cream. So we must look for one that will convert the greatest quantity of feed into the most milk and cream. The type of dairy cow we want is a cow weighing about 1,000 pounds. She must have a lean head and neck. Her eyes should be clear and large, indicating health and temperament. Her body should be narrow over the shoulders, and broad at the hip and rump. She should have a large chest, indicating vitality. Her pouch or belly should be large, showing that she is able to consume a large amount of rough feed.

She should have a set of large, branching milk veins leading to a well developed udder on which are placed four good sized teats.

She should carry very little flesh.

Before introducing any new cows into the stable have them tuberculin tested, to avoid introducing tuberculosis into the herd. Be on the lookout for any discharge which might be due to abortion, as this is another disease you must watch.

DAIRY COW SCALING POINTS.

Head.—Comparatively long from eyes to base of horns; decidedly feminine in appearance	2
Forehead.—Broad between the eyes and well dished	2
Face.—Outlines fine, especially under the eyes, showing facial veins. Length medium, with broad muzzle	2
Ears.—Of medium size, thin and finely shaped, covered with soft hair	1
Eyes.—Moderately full, large and mild	2
Horns.—Set comparatively narrow at base, fine, oval, well bent, inclining top line slightly curving, of good length, moderately thin, excellent in bearing	4
Shoulders.—Fine and even from top, lower than hips and moderately deep	3
Chest.—Low, deep, and broad	6
Chin.—Straight, broadly developed and open	5
Barrel.—Well rounded with large abdomen	5
Loin and Hip.—Broad, full, long and level	5
Rump.—High, broad and level, with roomy pelvis	4
Thurl.—High, with great width	4
Quarters.—Long, straight behind, room in the twist, wide and full at sides	4
Flanks.—Fairly deep and full	2
Legs.—Short, clean, tapering, with strong arm, in position firm, wide apart; foot of medium size, round, solid and deep	5
Tail.—Reaching to hocks or below, large at setting, tapering finely to a full switch	2
Hair and Handling.—Fine, soft and mellow, skin of moderate thickness, secretions oily and of rich brown or yellow color	10
Mammary Veins.—Large, long, crooked, branched with extension entering large orifices or milk wells	10
Udder.—Capacious, flexible, well developed, both in front and rear; teats well formed, wide apart, and of convenient size	12
Escutcheon.—	8
Total	100

FEEDING DAIRY CATTLE.

Dairy cows require different feed than beef cattle.

We should not feed much fat-forming foods, as our cows would lay on fat instead of producing milk. Feed more silage or roots in the winter season.

Daily feed for a 1,000 pound cow:

Give thirty to forty pounds of ensilage; seven to ten pounds of clover or alfalfa hay and eight to ten pounds of grain.

The writer has been most successful in giving official records to the cows on his own stock farm by feeding the following mixture as a grain ration.

Ajax, 125 lbs. Bran, 100 lbs. Ground Oats, 100 lbs. Corn Meal, 75 lbs. Oil Cake Meal, 50 lbs.

A good rule to follow in feeding this mixture is to feed a cow one pound to every three pounds of milk she gives. This amount may be increased a little when forcing a cow for an official record. Heavy Milkers should be watered three or four times daily and the water should always be luke warm. The cows that are soon to calve should be fed on succulent feed, such as silage or roots, bran, ground oats and a small amount of ground Oil Cake.

Keep the bowels open and do not feed very heavy on grains just before or after calving. After calving give a hot bran mash and warm the drinking water for a few days. Before allowing the calf to suck, wash off the cow's udder with Antiscpto solution as this prevents intestinal poisoning. Allow the calf to suck for about two days and then feed from a pail his mother's milk for two weeks, about three quarts twice a day or about two quarts three times a day; after that reduce it with skim milk and Dr. Roberts' Calf Meal, so that at the end of the fourth week the calf will be getting all skim milk with Calf Meal, which takes the place of whole milk. The Calf Meal is a valuable food which aids digestion, and has a great tendency to prevent scours.

Keep a supply of good clover or upland hay within reach, and also some ground oats with a little Calf Meal mixed with it. After the calf eats the ground feed, gradually get him accustomed to eating whole corn and oats, as this is the best feed for him up to six months old. The heifers should not be bred until about 15 to 18 months old.

A good time to dehorn calves is when they are a few days old. Use Horn Killer (see prescription No. 26, page 175.) Mark them with a number tag so you can keep a record of them.

Keep a record of the breeding of each cow, so you will know when she is due to calve, and then allow her to go dry for six weeks before calving.

The dairy bull should be fed like a working horse and should receive plenty of exercise. You may work him in a tread power.

The milking is one of the most important parts of the dairy business. The cows should be milked quickly, cleanly and quietly. Do not excite your cows, or they will not let their milk down. Don't lick a cow because she kicks. If she kicks, there is some cause for it. Look for the cause and remedy it. It may be a sore teat; it may be an inflamed udder, or it may be that she has been misused and regards her milker as an enemy that she must fight. If such is the case, treat her kindly and she will soon learn that you are not going to harm her.

Clip the long hair off the udder flanks and tail, and wipe off the udder with a damp cloth before milking, and you will be surprised to see how much cleaner the milk will be.

Weigh each cow's milk with an accurate scale and test the milk with the Babcock tester and you will be able to see how many of your cows are paying for themselves.

To test milk for butter fat you must have a Babcock Tester and bottle. Measure the milk with a pipette. Measure 17.6 c. c. (cubic centimeters) of milk with the pipette and put in the test bottle. To this add 17.5 c. c. of sulphuric acid and mix by shaking.

Then put in the tester and run the tester for five minutes, then add enough warm water to bring the butter fat up into the graduated neck of the bottle where it can be read. Run the tester one minute more and your test is ready to read.

You know how many pounds of milk your cow gives and how much it tests. Now, to find how much butter she is producing: Multiply the pounds of milk by the per cent of butter fat, then multiply by one and one-sixth and this will give you the amount. For example, your cow gives in one day 38 pounds of milk testing 4.2 per cent. You multiply 38 pounds of milk by

.042 butter fat.

76

152

1.596 pounds butter fat.

One pound of butter fat will make 1 1/6 pounds of butter; so you multiply 1.596×1 1/6=1.862 pounds butter.

This shows just how much butter your cow is producing a day.

If you sell your butter at 25c per pound your cow is earning for you 46½ cents a day.

1.862 pounds butter.

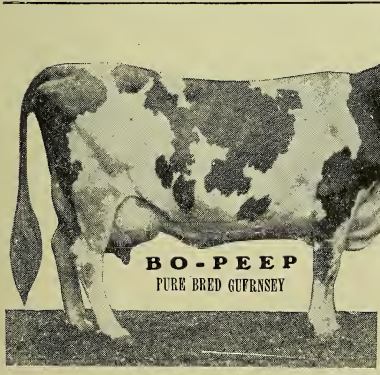
$ .25

9310

3724

$.46550

From this subtract the cost of feed and you will have the net earnings of your cow.



READ WHAT THE OWNER SAYS

Waterloo, Iowa, 12-12-'10

Dr. David Roberts,
Waukesha, Wis.

Dear Doctor:

I am sending you a photograph of the Grand Champion Guernsey cow, Bo-Peep, which I called you to Chicago to treat.

She arrived home from the National Dairy Show in excellent condition and I very much appreciate the professional attention that you gave her while there.

Yours very truly,

W. W. Marsh.

Figure 1.—Teeth of calf at birth, showing the first two incisors, milk teeth.

Figure 2.—Teeth at two weeks old, showing four temporary incisors.

Figure 3.—Teeth at three weeks old, showing six incisors.

Figure 4.—Teeth at one month old, showing eight incisors, or full set.

Figure 5.—Teeth at six or eight months old, showing wear on first two, or central teeth.

Figure 6.—Teeth at ten months old, showing absorption in first two pair of teeth, and wear of two outside pairs.

Figure 7.—Teeth at twelve months old, showing absorption in all the nippers, except outside pair, and wear in these.

Figure 8.—Teeth at fifteen months old, showing absorption and wear in all the temporary nippers.

Figure 9.—Teeth at eighteen months old, showing two first permanent incisors (1-1) and next two pairs (2-2) and (3-3), growing and pushing upwards toward the surface; also (4-4. 5-5 and 6-6) showing absorption. At (8-8) is shown the alveali, or cells for the teeth.

Figure 10.—Teeth at two years old past, showing four permanent incisors, and four temporary ones, absorption nearly complete; also marks of wear on two first pairs.

Figure 11.—Teeth at three years past, showing six permanent nippers, and two outside temporary ones nearly gone; also wear on two central pairs.

Figure 12.—Teeth at four years past, showing eight permanent incisors—the full mouth —and complete complement; also wear on all but outside teeth.

Figure 13.—Teeth at five years past, showing wear and dark marks.

Figure 14.—Teeth at ten years old, showing permanent spaces between them; also shape from natural wear by use.

SYMPTOMS AND TREATMENT OF CATTLE DISEASES

ABORTION
OR
SLINKING OF CALF

THE NATURE OF THE DISEASE OF ABORTION.

Abortion has two distinct though related meanings. The word is used to designate the act of prematurely expelling the foetus or, in common cow parlance, "slinking calf." While this is the first and most common application of the term, the second, and by far the most important designation, is that of the disease which is the cause of perhaps ninety per cent of "calf slinking."

CONTAGIOUS ABORTION.

Before it was understood or accepted that abortion is a disease, the act of abortion or prematurely expelling the foetus, was attributed to numberless causes and conditions.

Some laid the trouble to loosening feeds, such as flax seed meal and millet hay that was over-ripe when cut. Others were sure that the smell of fresh blood at butchering time would cause a cow to lose her calf.

But the most common theory, and one still widely accepted even by those who recognize abortion as a disease, is that the malady is caused by ergot or smut on grasses, corn and other grains. A little farther on I will take up this last theory.

I shall not deny that abortion may be hastened by the use of certain feeds which act upon the bowels in such a way as to cause undue straining by the cow, and it is quite possible that the smelling of fresh blood may be the immediate cause of the act; for nothing will cause more excitement among cows than the smell of the blood of their kind.

But I am convinced that if every one of these cases of abortion, apparently *caused* by certain feeds or periods of excitement, could be investigated, it would be found that nearly all, if not all of them, were really caused by the disease of Contagious Abortion, the germs of which were in the system of the animal, working upon and weakening the genital organs and interfering with the functions of reproduction and gestation; and that the feed or excitement only hastened the inevitable.

It is quite possible that, aside from these circumstances of internal or nervous excitement, many such cows would have carried the calves long enough to give them live birth, but in most cases the calves would have come prematurely. Such are termed "living abortions." Some would even carry the calf full time, but the germs of the disease would remain in the system of both the cow and the calf, causing trouble later for both.

In my veterinary practice of more than twenty years, which has been devoted in large part to cattle, with special reference to the disease of abortion, I have found that in nearly every case of abortion, except such as were causd by a fall, a kick or other absolute violence, the germs of the disease were in both the cow and the foetus.

ACCIDENTAL ABORTION.

As I have intimated, the act of abortion may be caused by accident to the cow. A fall, a kick by an animal or a brutal attendant, being hooked or otherwise injured,

may cause the act of abortion, but, unless the cow is predisposed to the act of abortion by the presence of the germs in the system, the violence must be very severe to cause the expulsion of the foetus.

It is, of course, natural for a cow to carry the calf full time, and nature persists in her course against ordinary interference. So when a cow aborts, it is indisputable evidence that she has suffered great violence from disease, or accident, or both.

The purely accidental *acts* of abortion coming under my care and investigation have been few, and I have used them to establish beyond doubt the contagious or infectious nature of the *disease* of abortion.

A TEST.

One of my experiments was selecting a herd of twenty-one cows, seven of which had aborted between the fourth and seventh month of pregnancy. Wads of cotton were soaked in the fluid accompanying the expelled foetus of one, and placed in the vagina of three healthy pregnant cows in another herd at a distance, the cotton being allowed to remain an hour. One of the cows aborted in twenty-three days, the other in twenty-eight days—the first being in the fourth and the second in the fifth month of pregnancy; and the third cow, being in the seventh month of pregnancy, aborted on the fortieth day following the experiment, the calf dying three days later of scours. This last case was a "living abortion," the scours being the result of the germs of abortion in the calf.

To confirm the positive evidence of this experiment, a negative experiment was later carried out. A perfectly healthy cow aborted from an injury caused by falling into an old well. Wads of cotton were soaked in the fluid of this cow and placed in the vagina of healthy pregnant cows, as in the former experiment, and no injurious effects resulted. The cows all carried calves full time, and no germs of abortion were found in the genital organs or afterbirth.

EFFECTS OF ABORTION ON PROFITS.

Before taking up the relation of contagious abortion to other diseases of cattle, I want to present the practical side of the subject. The interest of dairymen and breeders of cattle in any disease is purely a financial one. If we were not seeking for profits in the business, there would be no cattle industry—no cattle. If we were not battling to maintain or increase profits, we should devote little time or effort to eradicating disease.

But since our profits depend absolutely on the healthy condition of the herds—their freedom from disease—the battle against disease is waged continuously. It is a life and death struggle between the herds and disease, with the chances in favor of the latter, but for the intelligent aid of the breeder.

In this fight against disease, it is but logical to assume that the cattle raiser should give most attention to the malady that is most destructive of his profits, when he is assured what that disease is.

My experience and investigation impel me to declare specifically that *Contagious Abortion is the most destructive of all cattle diseases of the profits of the cattle raiser and dairyman of the United States, not even excepting the dreaded and dreadful tuberculosis.*

FOUR POINTS OF LOSS.

1. The Calf.

Abortion prevents the natural increase in the herd by loss of calves. Even when calves from an infected cow are dropped alive, they are weak and diseased,

are an expense and a source of worry, and very often die in the course of a few days or weeks, of scours, which is the direct result of the abortion germs in their systems. A calf thus born is a multiplied source of loss; it causes the loss of milk and feed consumed while it exists, a loss of time to the owner, and is a loss itself in the end.

2. The Milk.

A falling off or total cessation of the flow of milk invariably follows abortion. It requires no argument to show the dairyman that this is a direct cut into his profits, in fact, a vital thrust at his only source of income as a keeper of cows.

The loss to beef breeders, though less direct, is just as great proportionately; for besides losing her own calf, the beef cow is unfitted, to the extent of her falling off in milk, for suckling other calves of the herd.

The amount of this loss to the whole cattle industry, in the aggregate throughout the country, is appalling when we come to consider it. From the bases for estimate that I have been able to reach, I figure that the loss is from $12 to $25 per cow affected, or an average of $18 per head per year.

There are in America over 20,000,000 dairy cows, and not less than 10,000,000 beef cows; a total of at least 30,000,000 cows. It is a low estimate to say twenty-five per cent of these are suffering more or less from Contagious Abortion. Thus at least 7,500,000 cows are losing $135,000,000 annually, or are failing by that amount to produce what they should produce in healthy condition.

The reader may, at the first flash of such enormous figures, consider them overdrawn, but I am inclined to consider the estimate extremely conservative. There are individual cows in the country which bring in $250 to $300 gross annually. There are entire herds averaging $150 and $200. I do not believe a careful dairyman would keep a cow that returned less than $100 gross per year. A cow producing less than that amount under average conditions and cost of feed, should be disposed of, or, what is better, put in condition to produce more income. It is entirely within reason, in fact, is proven by close observation and comparison, that a cow with Contagious Abortion will fall off on an average fifty per cent in her milk, and consume just as much feed or even more than when in perfect condition. This would figure out $50 per head per annum; and, on twenty-five per cent (5,000,000) of the dairy cows alone, would equal $250,000,000, not to mention the beef cows. It is certainly, then, a low estimate to put the figure at little more than half that amount ($135,000,000), including both dairy and beef cows.

Note that this tremendous aggregate loss is in milk alone, it being impossible to make even an approximate estimate on the calves. But 7,500,000 calves constitute a large loss, when their possible value and future usefulness are considered.

3. The Cow.

The third source of loss is in the cow herself. Besides becoming profitless as a producer of calves and milk, the aborting cow is a source of expense and trouble. Being usually a cow that has produced well, the owner hopes for her return to former usefulness, and keeps her at an actual loss. Often the final result is barrenness, and too frequently a sacrifice on the butcher's block, with no attempt to restore the cow to breeding condition, which can be done in nearly every case by proper treatment.

4. The Herd.

The fourth source of loss from the abortion-infected cow is the spread of the disease to the entire herd and often to other herds through the service of the bull to which she is bred. Abortion germs are transmitted by all the usual agencies of

contact in infectious diseases, and by this additional and surest of all agencies, the herd bull.

The germs of the disease vegetate and multiply in the genital organs of both male and female, and are very liable to be transmitted to the cow served by the bull that has previously served an infected cow.

HOW TO PREVENT THE LOSS, THE GREAT PROBLEM.

After having proven to my own satisfaction that the enormous loss of scores of millions of wealth to farmers and breeders was just as real as the losses from fire or flood or drought or chinch-bug or any other pestilence or calamity, I began searching for a means to overcome the trouble. Already convinced that abortion was a germ disease, I reasoned that it would have to be attacked *in* the animal by injections into the circulation. After repeated experiments covering several years, I prepared an effective treatment. Gradually, I worked this treatment into my veterinary practice, where it proved itself to be so effective that owners came to depend on it, and asked for means to administer it themselves. Experience soon proved that the treatment could be safely and effectively administered by the owners themselves, and its use and demand accordingly spread rapidly.

I was not long, however, in reaching the conclusion that, with the hypodermic medicine must go an antiseptic wash for cleansing the genital organs of cows, heifers and herd bulls.

It was an easy step from this to the next conclusion, that the germs of the disease must be eradicated from the stables where infected animals had been kept, in order to remove this source of contagion.

To rescue a cow from the effects of the disease, while very necessary, is no more important than stopping the source of the disease.

Thus, I added to the hypodermic injection, the Antisepto for treating the genital organs, and to this the Disinfectall to destroy the germs in the stables where the infected animals had been kept.

This is the complete treatment, the directions for which are given in the closing pages of this book. The plan was developed and tested in oft-repeated experiments, then put into use in my practice, where it proved its efficiency beyond doubt; and finally, offered to and accepted by the cattle breeders as a reliable treatment for stamping out Contagious Abortion.

To paraphrase Patrick Henry, "Eternal vigilance is the price of profits," in the farming and live stock industry. The struggle is between the unerring instincts of the lowest forms of life and the intelligence of the human or highest form. And human intelligence, to come off conquerer, must not only invoke the aid of science, but must take one lesson from the germ itself; attack at every point whenever opportunity offers.

The germs of Contagious Abortion not only work on the diseased animals, but are found in the barns where diseased cattle have been housed, ready to attack every animal rendered susceptible to attack. They go farther back, and are found to affect calves dropped by cows infected with Contagious Abortion.

WHY ORDINARY MEANS HAVE FAILED TO ERADICATE THE DISEASE.

The giving of medicine per mouth, by drenching or dosing, disturbs the normal action of the bowels, and fails to reach effectively the sources of the trouble. In fact, this method often weakens the vital activities and thereby increases the susceptibility of the animal to attack, and thus aggravates the condition it was intended to relieve.

I want to say, in passing, that a cow should *never* be drenched for any trouble. There are better ways of administering medicines, without the dangers of drenching.

DISPOSING OF THE COW.

It is a common practice, when Contagious Abortion is discovered in a herd, to sell at a sacrifice those that abort, thereby hoping to banish the disease. But the abortion germ sits in legions upon every vantage point about the stable where this cow has been kept, and is not disturbed by such procedure. And the germs in the cow, if she is sold to another herd, rejoice in the prospects of new and fertile fields.

In selling the aborting cow, of course the dairyman contemplates replacing her. He usually sells her at a sacrifice and cannot purchase her equal, when healthy, for the same money. So he has suffered a direct loss. The cow purchased to replace her will be immediately exposed to infection, both from the rest of the herd and from the stable, where the aborting animal was kept, and will certainly be infected as soon as her condition is favorable. So it is, that the attempt to get rid of the disease by selling off and substitution becomes a means of spreading the malady to other herds, and to new additions to one's own herd.

NEITHER DIRECT TREATMENT NOR DISINFECTION ALONE WILL ACCOMPLISH PERMANENT RESULTS.

While the hypodermic treatment will destroy the germs in the mother's blood, and the Antisepto will destroy the germs in the genital organs of both the cow and the bull, the importance of Disinfectall must not be overlooked, as the means of destroying the germs in the stables occupied by infected cattle.

On the other hand, disinfecting the stables and cleansing the diseased organs will avail nothing permanent, while the disease runs riot through the system of even one animal in the herd.

COMPLETE, COMPREHENSIVE TREATMENT OF THE WHOLE HERD AND INFECTED QUARTERS, THE ONLY EFFECTIVE METHOD.

The combination of the three effective agencies of germ destruction into one system of treatment will rid any herd of this most dreadful scourge.

Let it be kept in mind that everything in the herd, excepting steers, require watching and treatment.

Calves.

The germs often affect calves when dropped, even if they are carried full time, where the cow has the germs in the system. But calves dropped before full time, "living abortions," are sure to carry the germs in the blood; and since these almost invariably have scours, the excrement is a fruitful source of infection for carrying the disease to other calves and cows of the herd.

Heifers.

Apparently healthy heifers may carry the germs in the blood from birth or be infected when calves, and show no signs of abortion until pregnant, when the germs instinctively become active and vegetate rapidly at every vantage point in the system. Close and frequent examinations, according to directions given farther on in this volume, will disclose the early symptoms of the disease, and with prompt action the calf can be saved.

Cows.

A cow that has calved is the most susceptible to attack, and is at the same time the most prolific source from which the disease may spread. This is especially

true if the afterbirth be retained. In fact, the retained afterbirth is often the source of origin of Contagious Abortion in a herd. At calving time the system of the cow is in an exhausted condition and the genital organs peculiarly susceptible to the invasion and spread of disease. Abortion germs in the system, though in comparatively small numbers and low state of activity, become active and increase rapidly at this time. The retained afterbirth becomes a hot-bed for germ propagation, and barrenness often results from the violence of the disease.

The afterbirth, even when dropped within reasonable time, still remains a fertile field of propagation and infection, unless buried or burned at once. The genital organs of the cow should also be given antiseptic treatment as soon as possible.

The Herd Bull.

It may seem strange that the bull should become the most dangerous and active source of abortion; but a moment's reflection will show the reason for this. The sheath of the bull, next to the diseased organs of the cow, is the most fertile source of germ propagation. As soon as the bull serves an infected cow, he is in condition to infect the next cow he serves, and the next, to entire herd, and all outside herds where his service is used. In spreading the disease in one's own herd, and in carrying it abroad to other herds, the bull is therefore the greatest source of danger.

One should not only see that his own bull is free from infection at each service, but that all cows brought to him for service are free from symptoms of the disease.

The Whole Herd.

Thus the necessity of treating the entire herd, except steers, is apparent; for while one infected cow, heifer, bull, or calf remains, the entire herd, and the neighboring herds, are in danger.

Steers are not a source of infection and do not require treatment, for the reason that when an animal is castrated he loses the means of transmitting the disease, and the system having no sources for germ propagation, rids itself of the effects of the disease.

Cleansing the genital organs of cows and bulls with antiseptic treatment, and cleansing the entire systems of cows, bulls, calves, and heifers by the hypodermic injection of Anti-abortion completes the treatment, so far as the animals themselves are concerned. Thorough disinfection of the stables completes the entire system of treatment, and wipes out the germ at every possible source of propagation.

NOT A THEORY.

If this system were merely a finely spun theory, I should not be writing this book. But it is the result of experiment and experience through more than twenty years of practice, and is confirmed by thousands of owners who have followed the plan out in detail.

RELATION OF CONTAGIOUS ABORTION TO OTHER DISEASES.

1. Accidental Abortion.

When a cow aborts solely as the result of an injury, the disorder cannot be called a disease; but unless the cow so aborting is looked after carefully, Contagious Abortion often results. For the cow is in the most susceptible condition possible for infection. The retaining of part of the afterbirth or foetus will often result in Contagious Abortion.

2. Tuberculosis.

A striking fact, developed from my experience when State Veterinarian, is that fully seventy-five per cent of all cattle slaughtered because of tuberculosis were also infected with Contagious Abortion.

This observation tends to corroborate a theory at which I had arrived in another way, that Contagious Abortion germs in the system prepare the way for the entrance of other disease germs, and predispose a cow to tuberculosis and other serious disorders.

3. Ergotism.

When a cow aborts, of course the act must be attributed to some cause. Many simply jump to the conclusion that the cow has been subjected to violence in some way; others attribute it to feeds or periods of excitement, without investigating the case.

Perhaps the most common cause to which abortion has been attributed is ergot.

Feet of cows severely afflicted with Ergotism. From a photograph.

The action of ergot upon the animal has a tendency to contract the womb upon the foetus and this was thought to be the direct cause of abortion.

The common term for ergot is smut, and this is often seen upon grasses, corn, and other grain, and is more prevalent during some seasons than others.

In the spring of 1893, my attention was called to a number of cattle afflicted with ergotism, having consumed a large amount of June grass, the June grass being so affected with ergot as to cause this herd of cattle to lose their feet and the ends of their tails. Many of them were seen walking around after the claws and first joints had dropped off. One animal in particular was so affected as to have her feet partly drop off. But upon change of feed and a course of treatment, recovered from the disease. She being pregnant at the time of this trouble and carrying her calf full time, is sufficient evidence that in this case ergot had nothing to do with abortion.

On the theory that ergot would cause abortion, owners of fine cows accidently getting with calf from grade or mongrel bulls, have tried to bring about abortion by administering large doses of ergot. The failure of such attempts in every case coming to my knowledge or observation is further evidence that ergot does not cause abortion.

The fact that a cow afflicted with ergotism, or any other disease, aborts, does not prove nor indicate that this disease is the cause of the abortion. Examination and test will show in nearly all cases that the cow is suffering from Contagious Abortion, *in addition to other ailments,* and the act of abortion is the direct result of the activity of the germs of Contagious Abortion.

4. Barrenness.

Barrenness results from abortion in two ways:

First, the presence and activity of abortion germs in the womb will cause barrenness; the germs causing a catarrhal condition of the womb and destroying the vitality of the semen of the bull, thus preventing conception.

The destruction of the germs of abortion in the system of the cow, by the abortion treatment, will often overcome this form of barrenness and restore the cow to her former usefulness.

Second, the diseased condition of the genital organs in Contagious Abortion frequently causes the mouth of the womb to became raw and irritated. When the disease is eradicated from the system, the mouth of the womb will heal up in a calloused condition, and become completely closed. This prevents the cow from breeding, and is usually regarded as permanent barrenness. But even this form of barrenness can be overcome by a special treatment.

Positive permanent barrenness is far less common than is generally believed. Only the absence or destruction of the ovaries, or other vital parts of the reproductive organs, or constitutional interference with their functions, will produce permanent barrenness.

No dairyman or breeder should dispose of a valuable cow because she does not breed, until he has thoroughly investigated the cause and made an effort to remove it.

5. Scours in Calves.

I have already called attention to the fact that scours in calves is often the result of Contagious Abortion germs born in the calf. This disease, like all other developments of abortion, is communicable to other members of the herd.

Housing of Cattle.

While this subject is not directly under discussion here, I cannot pass on without repeating what is everywhere urged; give cows plenty of sunlight and good ventilation. Damp, dark, poorly-ventilated quarters, partly underground, are absolutely certain to prepare the way for disease to enter, and to spread to the entire herd whatever contagious malady may affect one or more animals. An open shed is preferable to dark, foul basement stalls. No amount of fumigation or disinfection can make up for lack of air and sunlight.

CONTAGIOUS ABORTION CAN BE ERADICATED.

Procrastination is not only the thief of time, but the purloiner of profits in the live stock business. And there is no disease of cattle, excepting possibly tuberculosis, that advances more stealthily "under cover" than Contagious Abortion. An entire herd may be afflicted without apparent symptoms. Later, the disease may so develop as to render treatment unavailing as far as saving the calves is concerned.

But when careful examinations are made at frequent periods, the first and less

apparent symptoms will give ample opportunity to drive the disease from the system, save the calf and leave the cow in good condition for milk production.

Nothing is surer than the absolute eradication of abortion, if the system of treatment is persistently pursued.

Even when the disease has advanced so far as to kill the foetus, the cow can be saved and placed in prime breeding condition after the foetus is expelled; while without treatment, she is likely to become barren and worthless, besides being a source of infection to other cows.

Does the Treatment Hurry Abortion?

When Contagious Abortion reaches the stage in which the umbilical cord of the foetus is so diseased as to shut off the circulation from the mother, and, as a consequence, life ceases in the foetus, the treatment has a tendency to cause the act of abortion. And this is one of the good points of the treatment. For the longer the foetus is carried after life is extinct, the greater the damage to the cow and the danger to the herd.

No cattle owner should hesitate to begin the treatment at any stage of the disease; for the final result is always the complete stamping out of the disease, and delays at any time not only defer this desired result, but entail material losses.

If a pregnant cow, not affected by abortion, be treated as a precaution, the treatment has no ill effects on her. Neither is any ill effect produced upon the quality of milk when milch cows are treated.

SYMPTOMS OF CONTAGIOUS ABORTION DESCRIBED.

Abortion germs may exist for months, or even years, in the system of an animal, in a comparatively inactive state, without making any distinct outward sign of their presence.

A number of cows aborting in a herd should be looked upon with suspicion and any of the following signs looked for: swelling of the udder and vulva; separation from the balance of the herd; dullness; cessation of chewing of cud; restlessness; stamping of the hind feet; passing of a small water bag and a little later a foetus. Sometimes both are expelled together; then again the foetus will be expelled and the afterbirth retained.

The first certain symptom is the appearance of small red patches in the vulva. Frequent examination should be made in this manner: have a helper hold aside the tail of the cow, heifer, or calf, and, with your two hands, open the lips of the vulva. The appearance of small red patches on the lining membrane of the vulva is unmistakable evidence that the animal is infected and in condition to spread the disease. Service of the herd bull to a cow or heifer showing these symptoms will infect the bull and render him in condition to spread the disease to your entire herd and other herds where he is used.

If in the pregnant cow or heifer there appears with the red patches in the vulva, a secretion of white matter, prompt action should be taken, as she is in bad condition.

Swelling of the udder and vulva at any time before the last month of pregnancy, are advanced symptoms of abortion, and the crisis may come at any time. However, prompt attention will often prevent abortion even at this advanced stage of the disease.

Waiting for Distinct Symptoms is Dangerous and Expensive.

When the first appearance of the red patches in the vulva is noticed, it is the part of wisdom to disinfect the stables and treat the affected parts of the animals showing symptoms with the antiseptic wash.

Further; the discovery of one diseased animal in your herd is very strong circumstantial evidence that the others are infected. They may only show poor general condition or may appear to be in perfect health, but they should be under strong suspicion and continually watched and frequently examined. Many owners run no risk, but treat the entire herd so as to forestall the disease.

The Treatment and Directions for its Application.

All cattle afflicted with contagious abortion should receive treatment that will overcome the germs which produce the disease.

The genital organs of both cow and bull should be thoroughly cleansed with Antiseptо solution. The stable should be thoroughly disinfected. In this manner the disease is met at every turn and it is impossible for the germs of contagious abortion to exist where treatment is carefully administered.

See Prescription No. 1, *page* 174.

CONTAGIOUS VAGINITIS.

Contagious vaginitis is a disease which is causing a very extensive loss in the live stock industry, owing to the fact that there are so many valuable and highly bred cows and heifers, which are rendered useless and non-profitable on account of becoming infected with the germ which produces this disease.

It seems a hard problem for the average live stock owner to figure out why he should have in a herd of from thirty to forty head, from one to ten barren cows. Not having lost any calves from abortion makes it still harder to understand why this profit destroying disease should attack a herd. Often the trouble is laid to the sire, believing him to be absolutely useless, hence valuable sires are sometimes disposed of for beef, and not until another sire, or even a number of sires have been placed at the head of a herd, has the real cause of this trouble been located.

Barren cows or heifers thus afflicted should arouse the suspicion of a well versed breeder, owing to the fact that they come in heat at irregular intervals, and, when bred, sometimes pass a number of periods before coming in heat again.

To overcome this extensive loss, it is important to treat cows and heifers thus afflicted in a way that is practical and that will bring about favorable results. Experience has proven that it is important to put cows, heifers and bulls thus afflicted on a breeding tonic, which has a tendency to improve and strengthen the genital organs of both male and female.

The genital organs of such cows, heifers, and herd bull should be thoroughly cleansed with Antiseptо solution, which destroys the germ and overcomes the acid secretion, or catarrhal discharge, thereby putting them in a strong, healthy, breeding condition.

See Prescription No. 7, *page* 174.

Hingham, Mass., Feb. 20, 1911.

Dr. David Roberts Veterinary Co.:

In the latter part of 1909 and the first part of 1910, we gave our herd your treatment for Abortion. The result is more than satisfactory. Our herd is not only free from Abortion but from other diseases, and they now have a smooth sleek coat. Every progressive stockman in the country should give his herd your treatment.

Very sincerely,

C. R. GOODHUE.

Germs in Discharge.

Take Antisepto and lukewarm water, and with the flushing outfit flush out the genital organs of the cow, as shown in Fig. 3, inserting the hose about six inches into the vagina, and pouring in the solution as indicated.

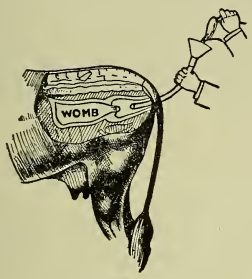


Fig. 3

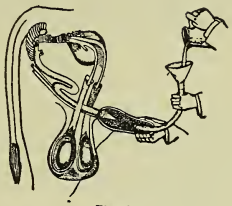


Fig. 4

All cows and heifers having an unnatural discharge from the vagina should have their genital organs washed out with the Antisepto solution, until all discharges cease. This is important, as animals showing a discharge are in a condition to spread the disease.

Fig. 5. Dr. Roberts administering the Anti-Abortion treatment.

The sheath of the herd bull should be washed out with the Antisepto fluid. Insert the hose about three inches into the sheath of the bull and pour in the solution, as shown in Fig. 4, a helper holding the sheath to prevent the hose slipping out. This treatment will protect the bull from becoming infected, and will prevent him from infecting cows and heifers bred to him.

The hair on a cow's tail should be kept closely clipped from the tuft or brush up to the body; also the hair at the end of the bull's sheath. When the hair is left long in these places it accumulates pus and other discharges and constitutes a fertile source of germ propagation and infection.

Caution.

In washing out the genital organs of cows, heifers, or herd bull, with the Flushing Outfit or Syringe, these instruments should be dipped in a strong solution of Disinfectall before inserting them into another animal, as there is always danger of carrying infection from one animal to another.

Keep Stables Clean.

Take an ordinary sprinkling can, fill it with water, put in your Disinfectall, and sprinkle your stable floors and walls freely. If you use whitewash, add one to two ounces of Disinfectall to each pail of whitewash.

Use Disinfectall once a week or oftener.

Care of Herd Under Treatment.

A cow in heat should be kept in during that period.

The bull should not be allowed to run with the herd, and should not be permitted to serve cows from other herds; nor should you take your cows to other herd bulls.

A cow that has aborted should not be bred until such time as she would have come in heat if she had carried her calf full time, and not then unless she is perfectly clean and free from any vaginal discharge. This is important, as a disregard of this rule is contrary to nature and hurtful to the cow.

Bury or burn afterbirth or foetus, and thoroughly disinfect the stalls.

Special care should be taken in keeping stables clean and well ventilated. The liberal use of whitewash and plenty of sunlight are desirable; also thoroughly disinfect with Disinfectall.

Directions.

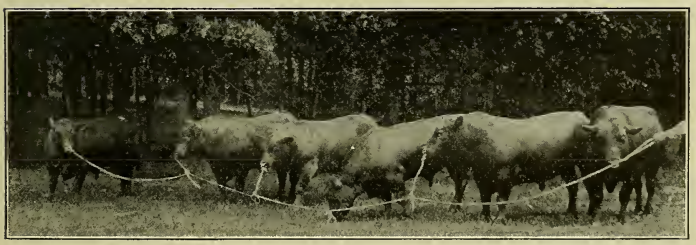
Full directions for using the abortion treatment will be found on each bottle, package and can.

See Prescription No. 1, *page* 174.

NOTE.—On account of the personal advice necessary to be rendered the stockman while the herd is under treatment, the treatment for Abortion is not handled by the dealer. We want stockmen to write direct to us for further information and special prices. In writing state number of cows, heifers, calves and bulls owned.

Group from the Holstein-Friesian Herd of St. John's Military Academy, Delafield, Wis., from which the Roberts Treatment Completely Stamped Out Contagious Abortion.

Herd of Cows Shipped to Waukesha for Treatment for Abortion Returned Home Cured.



Herd Bulls of Northern Indiana Land Co. Dr. Roberts' Treatment Stamped Out Contagious Abortion from this Herd, consisting of 425 Head.
See testimonial, page 53.

This Is What a Few of the High Authorities Have to Say in Regard to Dr. David Roberts' Work.

Gentlemen: I appreciate very much indeed the copy of your book, which has just been received. I know it will be found exceedingly valuable, and I am turning it over to the Veterinary Department, with the request that it be given a place in the library for the use of our teachers and students. With best wishes, I am,

Very truly yours,

H. J. WATERS,

Dean and Director, University of Missouri.

Gentlemen: I have your letter of the 11th and the book, "Abortion in Cows," which have recently come to hand. I thank you for both and shall give the latter a place in our Station Library for reference. I have read it with interest and profit.

Very truly yours,

E. D. JENKINS,

Director, Connecticut Agricultural Station.

Gentlemen: Yours of the 11th has been received, also the interesting little book on Contagious Abortion. I have read this book carefully and find it full of interesting facts. We will gladly give it a place in our library. Faithfully yours,

W. L. ENGLISH,

Director, Oklahoma Agricultural Station.

Dear Sir: The writer has received your new book on "Abortion in Cows." We have referred several gentlemen in this state to you, and now desire to have you send your book to another, Mr. James S. Miller, Emory, Va.

Yours cordially,

WALTER J. QUICK,

Dean and Professor of Animal Husbandry,

Virginia College of Agriculture.

Gentlemen: Permit me to thank you for your book, "Abortion in Cows." I shall go over this carefully and give my determination of such. I shall certainly give it a place in my library. Thanking you for the same and for past favors, I remain, Yours very truly,

WM. H. PEW,

Animal Husbandman, New Hampshire Agricultural Station.

Gentlemen: I beg to acknowledge receipt of copy of "Abortion in Cows." This is a most valuable little work and one that ought to be in the hands of every cattleman. The disease is little understood by the average stockman and anything that will contribute to a better understanding and a more successful treatment of it is a boon to the cattlemen. Very truly yours,

E. DAVENPORT,

Dean and Director, Illinois College of Agriculture.

Gentlemen: I believe that Dr. Roberts, in his little work on "Abortion in Cows," presents a practical common-sense solution of the abortion problem. The germ theory is the correct one, except in special cases, and the antiseptic and disinfecting treatment of animals appeals to the judgment of thinking men.

Respectfully,

M. W. WILLIAMS,

Editor, The Ohio Farmer.

SWORN TESTIMONY REGARDING SUCCESS OF DR. DAVID ROBERTS' ANTI-ABORTION TREATMENT.

The Most Impressive Array of Legal Evidence Ever Presented in Behalf of Veterinary Medicines.

This book may reach some who are not familiar with the remarkable achievements of Dr. David Roberts in stamping out Infectious Abortion by means of his Anti-Abortion Treatment.

For this reason, we take pleasure in submitting testimony in the form of affidavits legally sworn to before properly constituted authorities, which any stock raiser must accept as absolute proof of every claim we make for this Treatment. This testimony is supplemented by many other signed statements from men well known in the cattle industry, whose reputation for truth and veracity is unquestioned.

WISCONSIN EXPERIMENT STATION

Recognizes and Endorses Dr. David Roberts' Anti-Abortion Treatment—Mr. Baird's Herd Saved From Ruin.

State of Wisconsin, } ss.
Waukesha County. }

To WHOM IT MAY CONCERN:

S. A. Baird, being first duly sworn, on oath deposes and says, as follows:

My herd of cows was afflicted with Infectious abortion for at least six years—losing a large number of calves each year—at the same time trying to get rid of the disease by selling the cows or heifers that aborted and buying new ones in their places, but the new ones would abort very soon after being brought into my herd. In this way the disease seemed to increase, my loss being greater each year. I used various remedies advertised for the cure of this disease, but they all failed to even improve my herd. I began to think it was an incurable disease and was very much discouraged, when I happened to think that the Wisconsin Agricultural Experiment Station at Madison might be able to give me some information in regard to the disease or a treatment for same. So I wrote to Professor W. A. Henry, who is president of the Wisconsin Agricultural Experiment Station, and was answered by Professor W. L. Carlyle, who was at the head of the Animal Husbandry, and who advised me to consult Dr. David Roberts of my own city in regard to my afflicted herd, which I did. The doctor advised me to treat my herd with his ANTI-ABORTION TREATMENT, which I began doing on the 19th of December, 1899, and gave them a full treatment, according to directions with the best results. I am positive the TREATMENT cured my herd and it prevented some of my cows from aborting after they had showed symptoms, such as swelling of the udder and vulva. The symptoms would disappear in about ten days, and the cows would carry their calves full time. It has done all that DR. ROBERTS claims for it, and I cannot speak too highly of it. It has given me both pleasure and profit.

Signed: S. A. BAIRD,
Waukesha, Wis.

Subscribed and sworn to before me this 20th day of November, 1903.

HARVEY J. FRAME.
[SEAL.] Notary Public, Wis.

Professor A. S. Alexander, M. D., C. V. S., Veterinarian of the Wisconsin Agricultural Experiment Station, Madison, Wis., permits me to refer to him as a believer in the efficiency of DR. ROBERTS' ANTI-ABORTION TREATMENT, and in giving advice by mail to a Wisconsin correspondent some months ago, said: "I must confess, however, that I cannot prescribe anything for contagious abortion that gives as good results as those obtained from the use of Dr. David Roberts' Anti-Abortion Treatment, which to my knowledge has succeeded where thorough application of an antiseptic treatment advised by me had failed to stay or prevent the disease. His other remedies are also reliable and worthy of extended use by stockmen." DR. DAVID ROBERTS.

Yeksa Sunbeam Holds World's Record.

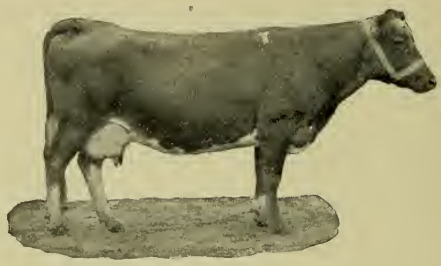
ATHENS, WIS.

Dr. David Roberts, Waukesha, Wis.

MY DEAR DOCTOR:—It is now just a year since you went over my logging horses. While they are much better than in former years before you gave them attention, it is to be nevertheless presumed that in a bunch of fifty there will be some that need their teeth dressed again and other ailments looked after.

My Guernseys should also have their annual tuberculin test applied, so when you come bring tuberculin enough to test 80 head. We might do the testing ourselves, but I feel safer to have it done by a skilled hand.

And I think you will want to see Yeksa Sunbeam after taking the world's record on both milk and butter fat production, 14,920 pounds of milk and 857.15 pounds of butter fat, equal to 1,000 pounds of butter. This is a large amount for a cow to produce in one year; but she is not alone in the herd that has done or is doing fine work. The cows are all doing well and the whole herd is doing fine.



YEKSA SUNBEAM 15439 A. G. C. C.
Dropped April 2, 1895. Helendale Herd, Athens, Wisconsin.
Fred Rietbrock, Proprietor, Milwaukee, Wis.

There has not been a case of abortion since March last. Cows and heifers are carrying their calves full time and drop sound and healthy calves. We have used your ANTI-ABORTION TREATMENT, as directed, with great effect, and have also had splendid results with your Laxatonic, given with a spoon dry on the tongue, also with the Gall Balm on the horses' shoulders.

In one word, I am satisfied that your veterinary remedies are excellent and are effective for the purposes recommended.

Now, if a trip of 230 miles is not too far to come on such short notice, come while I am here, as I expect to stay till about the 28th or 29th inst. Let me know when you will be here. Yours truly, FRED RIETBROCK.

State of Wisconsin, } ss.
Waukesha County. }

Dr. H. H. Smith of New Munster, Wis., being first duly sworn, on oath deposes and says as follows:

I have used DR. ROBERTS' ANTI-ABORTION TREATMENT in my practice for the past nine years and have found it all that is claimed for it.

I cheerfully recommend it to other veterinarians.

Signed: DR. H. H. SMITH,
New Munster, Wis.

Subscribed and sworn to before me this 17th day of January, 1903.

A. L. BLACKSTONE.
Notary Public, Wis

Cured Twenty-Two Cows.

State of Illinois, }
De Kalb County. } ss.

I. Vandeburg, being duly sworn, on oath deposes and says as follows:—

My herd of twenty-two cows being afflicted with Abortion in 1902, I decided to try Dr. Roberts' Anti-Abortion Treatment, which I did with results satisfactory, and I believe if used according to directions is a sure cure every time.

I. Vandeburg, Kingston, Ill.

Subscribed and sworn to before me this 2d day of January, A. D. 1904.

[seal.] J. A. McCollom, Notary Public, Wis.

An Illinois Endorsement.

State of Illinois, }
Johnson County. } ss.

This is to certify that I have used Dr. Roberts' Anti-Abortion Treatment and find it to be all that is claimed for it.

I take great pleasure in recommending it to anybody whose herd is afflicted with Infectious Abortion.

Signed: J. E. Arnold, Vienna, Ill.

Subscribed and sworn to before me this 31st day of August, 1903.

S. A. Van Kirk,
[seal.] Notary Public, Ill.

Will Use Nothing Else.

Marengo, Ill.

Dr. David Roberts, Waukesha, Wis.

Dear Sir:—The Anti-Abortion and syringe which I bought of you last January came all right. I did not use it on my full herd, but just on those cows and heifers which showed signs of aborting, about eighteen head. All excepting one heifer carried their calves to full time, and that one aborted the third day after I got the Anti-Abortion, so I am sure that your remedies did for us all we could expect of them, and I will not use anything else in case I am in need of such medicine. Respectfully yours, Jos. Berner.

Wants Ten More Bottles.

Washington, Pa.

Dr. David Roberts.

Dear Sir:—Please send me ten more bottles of your Anti-Abortion for abortion in cows. I think it is simply a wonderful medicine. Before using your remedies my cows were badly afflicted with contagious abortion, not one in twenty that would not abort and afterwards would not get with calf. I began using your Treatment last April, and have had no trouble of any kind with them since. One cow in particular that showed every symptom of aborting, I used the medicine as directed, the symptoms left, and she carried her calf the full term.

Please send this at your earliest convenience to Washington, Pa.

Very truly yours, Clark T. Harsha,
R. D. No. 5.

He Recommends Treatment.

Dr. David Roberts, Waukesha, Wis. Minier, Ill.

Dear Sir:—I have used your Anti-Abortion Treatment and some of your other remedies and I am more than pleased with them. They will do all that you claim and I can recommend them to any one.

Yours truly, Clarence Wilson.

Treatment Did All You Claimed It Would.

Dr. David Roberts, Waukesha, Wis. Windsor, Wis.

Dear Sir:—Your Anti-Abortion Treatment did all that you claimed for it for me. I know that all my cows would have aborted if I had not used it. Four had aborted in one week previous to using it. I had only one abort after I commenced using it, though five more showed every symptom of abortion. The twenty cows in my herd had their calves alive and all right.

Yours truly, S. D. B. Mooney.

A Herdman's Endorsement.

OSHKOSH, WIS.

Dr. Roberts' Veterinary Co., Waukesha, Wis.

DEAR SIRS:—We have used several of your cattle prescriptions with excellent results and would cheerfully recommend them to Cattlemen and Veterinarians. The Cow Tonic and Laxotonic have produced marvelous results in severe cases of indigestion, constipation and loss of appetite. Your Stokvigor, when mixed with ground flaxseed, makes a Stock Tonic that is an excellent conditioner for cattle, and we have also used it with good results for the prevention and cure of scours and indigestion in calves. Your Cow Cleaner should do away entirely with the dangerous practice of removing the afterbirth by hand, as it does the work surely and thoroughly and leaves the genital organs in a healthy condition; it is a wonderful remedy. Yours very truly, ALBERT PORTZ, Herdsman.

Cow Cleaner Removes Retained Afterbirth.

WHEELING, W. VA.

Dr. David Roberts, Waukesha, Wis.

DEAR SIR:—I have used a number of your remedies and find them all that you claim for them. I have used your Cow Cleaner and find that it will remove a retained afterbirth and leave the cow in condition to breed without any trouble. I have also used your Laxotonic, and for constipation or stoppage of the bowels it is the best remedy I have ever found.

Truly yours, M. T. MONTGOMERY.

Stopped Loss of Calves.

State of Wisconsin, } ss.
Waukesha County, }

J. A. Griswold, being first duly sworn, on oath deposes and says as follows:—

My herd of 25 cows was afflicted with Infectious Abortion in 1898. After losing a number of calves, I began treating them with DR. ROBERTS' ANTI-ABORTION TREATMENT. I gave them a full treatment with very satisfactory results. I feel that they were permanently cured, for I have not lost any since that time.

The herd is in excellent condition, and I take great pleasure in recommending DR. ROBERTS' ANTI-ABORTION TREATMENT to any one whose herd is thus afflicted. I cannot speak too highly of it.

Signed: J. A. GRISWOLD,
Duplainville, Wis.

Subscribed and sworn to before me this 10th day of August, 1903.

A. L. BLACKSTONE,
[SEAL.] Notary Public, Wis.

A Boon To Dairymen.

Dr. David Roberts.

It is with pleasure that I make the following statement:—

For some time I was bothered with abortion in my herd. I used a number of different kinds of other medicines and they all failed. At last I began to use your Treatment, and have found it does what you say it will. It not only prevents abortion, but cures it. I have not had a case of abortion since I began to use your Treatment. It is a boon to dairymen and my stable will never be found without it hereafter.

I will be pleased to answer any questions in regard to my experience with your Abortion Treatment. Signed: E. R. FRANK,
Mindoro, Wis.

Subscribed and sworn to before me this 12th day of January, 1905.

GEORGE S. HEWITT,
Notary Public, La Crosse Co., Wis.

My commission expires April 6, 1908.

Wiped Out the Disease From 17 Herds.

EXPERIMENTAL STATION, UNIVERSITY OF OHIO.

Dr. David Roberts' Veterinary Co. Aug. 7, 1908.

The 17 herds that were treated with Dr. Roberts' Anti-Abortion Treatment, over which I had supervision, have fully recovered from the disease and in every way the treatment has proved to be a success.

Yours very truly, O. ERF, Professor of Dairying.

Lost 1,000 Calves In One Year.

DE MOTTE, IND.

Replying to your letter of the 14th regarding the abortion in our cows, and as to the benefits derived from your treatment, will say I have watched these cows very carefully and notice their condition is much improved from last year. Last year we lost nearly 1,000 calves and some of the cows, while we have been very successful in saving our calves this year, and our cows are in much better condition than they were a year ago, and we believe that is due to Dr. David Roberts' Abortion Treatment. I have great confidence and am well assured, with Dr. David Roberts' Abortion Treatment (by the use of the Anti-Abortion and washing out the genital organs) that Abortion can be entirely cleaned out of my herd.

NORTHERN INDIANA LAND CO.,
By C. D. Shook, Supt.

Dr. Roberts' Veterinary Co., Waukesha, Wis. MONTCLAIR, COLO.

DEAR SIR:—It is a pleasure for me to inform you that abortion is eradicated from my herd of 65 cattle by the use of your Anti-Abortion Treatment.

If you should meet with any persons who are in doubt as to the merits of your remedies, you are at liberty to refer them to me, as I think it would be a crime not to let those meeting with losses (as I have) know that there is relief for them through your remedies. Yours respectfully, JONAS WASHBURN.

All inquiries regarding the Abortion Treatment will be treated as strictly confidential.

Please give express office address.

Pauline Wayne Third.
This cow presented by Senator Isaac Stephenson, of Wisconsin, to President Taft.

Dr. David Roberts, Waukesha, Wis. Kenosha, Wis., Feb. 24, 1911.

Dear Doctor:—I am sending you a photograph of Pauline Wayne 3d, the pure bred Holstein cow that U. S. Senator Isaac Stephenson presented to W. H. Taft, President of the United States, last December.

This cow received your treatment for abortion with the balance of the herd and gave birth to a nice, strong, healthy calf in the White House Barn at Washington, a week after she arrived there.

Believing that these facts will prove of interest to you, I am,

Yours very truly, JAMES P. TORREY, Supt. Stephenson Farm.

AFTERBIRTH RETAINED.

The retention of the afterbirth or placenta (or failure to clean beyond a certain time after the expulsion of the foetus or calf from the uterus) must be looked upon as an unnatural condition which requires attention. The afterbirth should be shed or expelled soon after the foetus is dropped or the calf is born. With ruminants (or animals that chew the cud) retention of the afterbirth is not uncommon, though even in them there is a difference in this respect according to species, it being more common in the cow than in the sheep or goat.

This frequency of retained afterbirth in the ruminant animals is doubtless due to its peculiar conformation or button-like fastenings.

Cow Ruined As A Profit Producer.

While a cow may appear to be little inconvenienced by the retention of the afterbirth, at the same time she is, if neglected, being slowly ruined as a milker, breeder, or profit producer.

Neglected Cow Endangers the Whole Herd.

A cow that has retained her afterbirth is not only being ruined as a profit producer by being neglected, her milk will not only be short in quantity, poor in quality, but absolutely unfit for human use. She may be also acting as a hotbed for the propagation of the germs of infectious Abortion and Tuberculosis. These may be brought on by decomposition of the retained afterbirth.

The Herd Bull Liable to Infection.

As this continues the animal absorbs the poisonous formations of matter which causes her to grow weak and lose flesh rapidly, thus putting her in a condition so that when she is bred to the herd bull she may infect him with the germ of infectious abortion and he is then in a condition to spread the disease.

In this manner the disease of infectious abortion may be introduced into a herd and great loss caused.

Danger of Tuberculosis.

This same cow, in her run-down condition, may also contract tuberculosis, and then expose the entire herd.

How To Know It.

Usually there is more or less of the foetal envelopes protruding and hanging from the vulva orifice, though sometimes only the umbilical cord is to be seen. Occasionally the mass is so large as to hang below the hocks with little sacks of liquid at the lower end. If recently expelled, it has a fresh tint, not materially different from that of the intestines; but if exposed for some time, especially in the summer, it becomes greyish in color.

Decomposition soon sets in, especially in the exposed parts, and as putrefaction progresses the odor becomes very offensive, and thin, bloody, brown tinted discharges, composed of the decomposed parts of the membrane and secretions from the irritated mucous lining of the genital canal, flow from the vulva, soiling the tail, thighs and hocks, and often making them sore.

Cow Health In Danger.

As these causes continue, the health of the animal suffers. Oftentimes there is dullness, prostration, decreased flow of milk, loss of appetite, quickened respiration and increased temperature and other indications of illness.

Retention of the afterbirth occurs most frequently in cases of abortion or when birth occurs some days before the proper time. Usually a cow that has retained the afterbirth at its first calf will do so at each succeeding birth.

Cow Under Continuous Drain.

Among the breeding cows the consideration of proper care must be made important in order to make either breeding or dairying profitable. The breeding cow must carry a calf every year, and this notwithstanding that she is at the same time suckling another calf.

The dairy cow must breed every year, and at the same time must give a generous flow of milk for her owner's profit from nine to eleven months yearly. If her health is lowered thereby, or her life shortened, the question of profit must be considered, and she should yield her place to another when she fails as a profit producer.

How To Prevent Retention of the Afterbirth.

There are certain points, however, in which the care of the cow should be considered. The pregnant cow should have exercise, and as regards both exercise and food, nothing is better than Nature's care, such as she gets while at pasture. She should not be given ice cold water to drink, or be exposed to violent excitement, such as being chased by dogs, riding, or being ridden by cows in heat, driven through narrow gateways, compelled to jump ditches or fences, hooked by other cattle, driven on icy or slippery ground, or being kicked or pounded by vicious attendants.

The diet should be good, clean, wholesome food, such as will produce the greatest amount of strength and yield of milk both for the profit of the owner and the nourishment of the foetus.

Much Expected From The Cow.

Much more is expected from the cow than any other domestic animal. In the breeding cow the value of the calf is the important consideration, and in the dairy cow the yield of milk. In either case the system is at all times under a continuous drain, furnishing blood, muscle, bone and sinews for the foetus, at the same time producing milk either for another calf by her side or for the profit of her owner.

The Cow A Sure Profit Producer.

For this reason the cow should receive a reasonable amount of care and attention. She is the surest and most reliable of all farm profit producers, the one animal which the owner can bank upon to always produce her share of the income, provided she is given a reasonable amount of care, which consists in pure water, good, clean, wholesome food, and such ingredients as will regulate and control the nervous system, and stimulate the sluggish organs, of which a pregnant cow is usually the possessor. The sluggish organs are among the greatest causes of the retention of the afterbirth, at the same time being a cause of constipation, which is only a symptom of the former.

Nature's Demands.

To prevent the conditions which cause a cow to retain her afterbirth it is necessary to give such ingredients with the food as will have an affinity for the genital organs, and will enable them to perform each and every function that nature demands them to perform at the trying and critical period of calving, thereby enabling the cow to deliver herself of her calf without an unreasonable amount of exertion, and at a reasonable time after so doing to expel the afterbirth, without mechanical aid.

Nature Needs Assistance.

So much is expected of the pregnant cow and the drain upon her system is so great that she should have proper feed and such ingredients added to it, as go to make up a perfect tonic for a pregnant animal.

It is impossible to care for cows as nature would care for them. To a certain extent they are deprived of proper laxative food and water when desired, exercise and sunlight, and such vegetable matter as nature requires to keep her genital organs in a strong, healthy condition. Being deprived of these, it is necessary that they be furnished with something to take their place, thus enabling the genital organs to perform each and every function required, such as contracting upon the matured calf, causing same to be born at the proper time, and expelling the afterbirth within a few hours afterwards, enabling the cow to come in heat at regular intervals, and to get with calf when bred.

Breeding Tonic Essential.

Breeding Tonic, which is prepared especially for pregnant cows and heifers, should be fed to pregnant cows in small quantities in their feed during the period of pregnancy. This will keep the genital organs in a strong, healthy condition, thereby enabling them to give birth to strong, healthy calves in the proper manner, at the same time preventing retention of the afterbirth, catarrhal discharges, and barrenness.

By keeping the cow in a perfectly healthy condition, you enable her to ward off many diseases that might otherwise be contracted at this critical period. The feeding of this Breeding Tonic to pregnant cows strengthens and invigorates the muscles and all of their genital organs to such an extent that they have no trouble in calving and expelling the afterbirth as Nature intended.

Never Use Force In Removing An Afterbirth.

An afterbirth that can be removed without force or injury to the cow is in a condition to come away of its own accord.

In removing the afterbirth by main force it is only the body of it and such buttons as are torn off that comes away, thus leaving many serious conditions. If the cotyledons or buttons are forcibly torn off, there is great danger of serious internal hemorrhage, as well as leaving a lot of clotted blood in the womb to decompose.

When Force Is Used Parts Remain.

The parts of the afterbirth attached to the buttons are retained and undergo putrefaction, and the buttons torn from the womb leave raw sores, which become infected by the rotting, decomposing, irritating masses of foreign matter of which a large per cent is absorbed by the system.

Danger of Expelling the Womb.

By using force the horns of the uterus may be turned inside out. This will cause the cow to strain violently, and by so doing the womb is often expelled, the result of which is serious and often fatal.

The displacement of either or both horns of the womb will cause the cow to strain for some time. This condition may, and often does, cause barrenness.

It is for this reason that barrenness often occurs when the afterbirth is forcibly removed.

Drainage Important.

The afterbirth should be allowed to remain until the buttons are ripe and in condition to release it by its own weight The afterbirth in this way acts as a drainage by keeping the mouth of the womb open. This allows the contents of the womb to escape, instead of being retained by closure of the mouth of the womb.

Danger of Poison.

In this case, the animal would be compelled to absorb the poisonous matter, consisting of pieces of afterbirth which are always retained when force is used in removing it. Otherwise, the mouth of the womb would close and cause the womb

to fill with matter, a portion of which is expelled, causing a catarrhal condition of the vagina, and acting as a hotbed for the germs of infection to propagate and multiply. This is liable to produce Barrenness and Infectious Abortion, and the cow by absorbing a large portion of this matter dries up on her milk, grows thin rapidly, and is liable to become a victim of tuberculosis. If she contracts tuberculosis she may then expose the entire herd to the disease.

See Prescription No. 2 for Prevention of Retaining Afterbirth, page 174.

TREATMENT FOR RETENTION OF AFTERBIRTH.

To overcome this condition the cow should be given a loose stall, dry, clean, and warm, with plenty of sunlight and good ventilation. A blanket may be placed on her if necessary. Plenty of warm drinks, good, clean, warm, sloppy, nourishing food, containing such ingredients as will loosen the bowels by toning them; and will tone and stimulate the genital organs so as to put the cotyledons or buttons in a perfectly healthy condition. This will enable the cow to naturally expel the afterbirth, which should be removed from the box stall as soon as expelled, so as to prevent the cow from eating it.

The ingredients which will enable the genital organs to perform their functional duties and will enable a cow to expel her afterbirth in a natural manner are contained in the Cow Cleaner, which is prepared especially for and should be given in all cases of retained afterbirth.

Prevent Blood Poisoning.

In retention of the afterbirth it is very essential to prevent putrefaction, decomposition, and absorption of the decomposing mass; also to prevent and destroy germs, soothe the irritated parts, prevent inflammation and hasten the expulsion of the afterbirth. It is very necessary to use such ingredients in the form of a solution for washing out the vagina while the afterbirth is retained, and even after the expulsion of same and until all discharge ceases, as will accomplish all this. At the same time the solution must be harmless in case the animal absorbs part of it, which she is very liable to do. Many a valuable cow has been ruined or destroyed by absorbing powerful, poisonous solutions for washing out the genital organs.

To avoid this danger, use Antisepto for preparing an Antiseptic solution which is to be injected with a hose and funnel into the vagina of all cows afflicted with retention of afterbirth. This Antisepto is an especially prepared remedy for washing the genital organs of cattle.

Antisepto is invaluable for this purpose, as it contains ingredients that prevent and destroy germs, at the same time is healing and soothing to the delicate organs of the cow and is harmless if absorbed.

See Prescription No. 3 for Afterbirth Retained, page 174.

ABSCESS.

An abscess may be detected, if situated externally, by heat, pain, redness, and swelling in the early stage.

Treatment.

The opening of an abscess should be encouraged by poulticing with Antiseptic Poultice. However, if lanced, care should be taken not to open too soon. The time to open an abscess is just before it is ready to break.

The cavity should be kept open and syringed out with a solution of Germ Killer once or twice daily, then inject the Healing Oil and Healing Lotion, alternately, as directed.

*See Prescription No. 4, page 174.

ANTHRAX.

Anthrax in cattle is an infectious disease which is caused by bacteria, or germs known as anthrax baccili. While Anthrax is somewhat limited to cattle and sheep, it may be transmitted to other animals, but poultry are immune.

It is a dangerous disease, owing to the fact that man is susceptible to it and is sometimes infected by removing the hide from animals which have died from this disease.

When cattle are afflicted with this disease there is usually a high fever; the temperature may run from 106 to 107 degrees; the pulse beats from 80 to 100 beats per minute; they quit chewing their cud, and have an anxious look upon their contenance; they are soon taken with chills; the ears and horns are cold, and the coat staring.

The animals appear dull and stupid, and manifest great weakness. There is champing of the jaws, spasms of the limbs, kicking and pawing the ground. They usually breathe hard, and the nostrils become distended, the mouth opened, and the head raised. The mucous membrane of the nose and mouth become blueish. They usually manifest their pain by moaning and groaning. In the last stages of the disease, blood usually oozes from the mouth, nose and bowels.

The use of Anthrax Vaccine as a preventative for stock against a subsequent attack of Anthrax is advisable, but owing to the fact that this Vaccine contains anthrax baccillus, which though having been modified may have power to take on its original destructive power, too much stress cannot be laid upon the necessity of having the Vaccine administered by one who thoroughly understands the detailed conditions of the case in question.

See Prescription No. 5, page 174.

APPETITE DEPRAVED.

Cattle thus afflicted have a strong desire to lick the walls, eat dirt and filth, that a healthy animal would have no desire for.

Treatment.

Give good, clean, wholesome feed, and give Cow Tonic, according to directions. Medicate all salt with STOKVIGOR.

See Prescription No. 6, page 174.

The government estimates the country's annual loss of live stock by disease to be fully twenty million dollars. This loss can be greatly reduced by the study of live stock, their care and improvement, their symptoms and diseases, their cure by prevention and treatment.

An inferior, non-profitable, pure-bred or grade cow should be slaughtered rather than let her produce more of the same kind.

It is surely more advisable to keep a few well bred, high producing cows in place of a lot of inferior non-producing cows that are in reality only boarders.

BARRENNESS.

Barrenness, sterility, or failure to breed in cows and heifers, is due either to imperfect, unnatural, or diseased genital organs.

Imperfection of the Genital Organs.

This is one of the causes of barrenness, and may be due to an undeveloped womb or imperfect ovaries.

It is usually the case that when a twin heifer and bull calf are born, and the bull proves to be fruitful, the heifer is barren, and vice versa. If this be the case with the heifer, she is not liable to come in heat at all, and is very apt to take on a masculine appearance; more often having the appearance of a steer than a bull. Even after she has arrived at breeding age, the breeding organs are undeveloped and there is no sign of an udder, this being proof of imperfect genital organs.

An animal thus afflicted can never be made to breed.

Unnatural Condition of the Organs.

An unnatural, swollen and inflamed condition of the genital organs may be brought on by retention of the afterbirth, this being allowed to be retained in a decomposing condition until it rots away, leaving the mouth of the womb irritated, scalded and sore, so that when it does close, it heals closed so firmly that it cannot be opened without mechanical aid in the form of a dilator.

Diseased Organs.

The genital organs may become diseased from several causes, chief of which is neglect, in cases of retained afterbirth, the same becoming decomposed and converted into matter, causing a catarrhal condition of the mucous membrane of the womb and vagina.

If a cow be served while in this condition, the semen of the bull will be destroyed by this corrosive discharge, thus preventing conception.

Diseased Bull May Cause Barrenness.

If a healthy cow be bred to a bull infected with germs of abortion, she is very liable to become infected. This infection will set up a catarrhal condition of the womb and vagina, and irritate the mouth and neck of the womb to such an extent as to cause same to become sore, and when this sore heals, the scar tissue and cartilage formations are so firm and rigid that they will not open without mechanical aid.

Tumorous Growth May Cause Barrenness.

A slow catarrhal condition of the womb oftentimes causes a gristly, sticky, pliable formation of mucous, called Neoplasm. This renders conception more or less difficult. The formation of small growths, such as tumors, which are liable to form on any part of the genital organs, but are more apt to be at the mouth or in the neck of the womb, often prevent conception.

Barrenness May Be Transmitted.

A barren cow, afflicted with a catarrhal discharge of the genital organs may be bred to a perfectly healthy bull; the bull then becoming infected. He in turn may be bred to a perfectly healthy cow, which has never been afflicted with barrenness, and she may in this way become infected and rendered barren.

How To Know It.

A reasonably healthy cow or heifer that may be bred once or twice at different periods of heat to a reasonably healthy bull, and fails to get with calf, should be looked upon as barren, unless it may be the fault of the bull, which is very seldom

the case. This can be determined very easily by breeding the bull to several of the cows and watching the results. If any of them conceive, that proves that the bull is not at fault.

In case a cow does not conceive it is not advisable to take her to outside bulls, as by so doing chances are being taken of introducing into your herd diseases that may prove more serious than barrenness.

Suspicious Signs of Barrenness.

A cow coming in heat at irregular intervals, or at unreasonable periods, such as the day following the expulsion of a foetus or the birth of a calf, are signs of barrenness.

The mere fact of a cow coming in heat at any time after she is bred should be looked upon with suspicion, and should receive proper attention as early as possible, for the reason that the longer a cow remains barren the more difficult it will be to get her with calf.

All Healthy Cows Should Breed.

All reasonably healthy cows and heifers should be made to breed.

This can be done with little trouble and slight expense if given proper attention. Many a valuable cow and heifer have been sacrificed or disposed of for the reason that they were not made to breed. This may have been due to a lack of proper information pertaining to this subject.

It is very important that a cow in order to conceive be in a reasonably healthy condition. The genital organs should be in a condition to perform their functional duties as nature would have them. A lack of secretion or an excess of secretion, renders conception difficult. A lack of ambition or vigor, or an over amount of same, renders conception difficult, a lack or an excess of either being an unnatural condition of the genital organs. This should be overcome and controlled by the use of the Breeding Tonic, or ingredients that will regulate and control the genital organs.

First of all, the cow or heifer should be in a reasonably healthy condition. She should not be too thin (emaciated), thus lacking the strength which nature demands; neither should she be too fat (plethoric), or over-stimulated, for in this condition conception would be difficult.

Favorable Signs For Breeding.

A cow before breeding should be carefully noticed, to make sure that there is no unnatural discharge from the vulva. A natural discharge would be a discharge of mucous that has every appearance of the white of an egg, and at the period of heat usually contains a little blood.

Unfavorable Conditions for Breeding and Danger of Infection.

An unnatural discharge from the vulva may be a discharge of mucous streaked with or containing drops of matter or pus, or a discharge that is all matter or pus, very sticky in nature, adhering to the roots of the tail, at the same time having a very disagreeable odor. This discharge indicates that the organs are very much diseased.

Sign of Abortion.

Another discharge which is often noticed, and which often follows abortion, is a brownish red, or chocolate-colored discharge, very profuse, having a sweetish, sickening odor. These discharges often stimulate and irritate the genital organs of a cow or heifer, thus causing them to come in heat at irregular periods, such as a day or so after expulsion of the fœtus or calf, and if the cow or heifer in such condition be bred to a perfectly healthy bull it may not only infect him and render him in a condition to infect other cows, but may also produce an acute irritation and inflam-

mation, which may leave his organ in such a sore, irritated condition that he will have no desire to serve a cow until he has been treated with an antiseptic solution.

Bulls Should Have Attention.

The solution, which should be injected into the sheath of the bull, should destroy germs and soothe and heal the irritated and inflamed mucous membrane.

This will enable him to serve a cow when called upon to do so, at the same time preventing him from infecting cows that he may be bred to, also preventing him from becoming infected.

TREATMENT OF BARRENNESS.

All barren cows and heifers should be given Breeding Tonic in their feed, and their genital organs should be washed out with the Antisepto Solution.

Barrenness is due either to a diseased or weakened condition of the genital organs. It is unreasonable to expect a cow or heifer to breed until this condition is overcome.

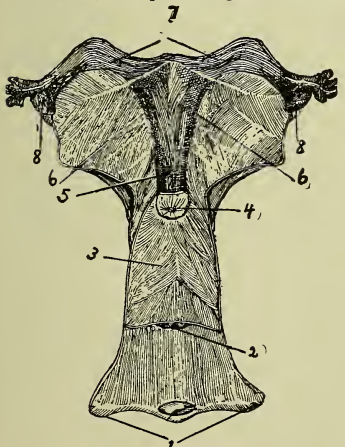
The Breeding Tonic contains such ingredients as are necessary to tone, strengthen and regulate the genital organs in this manner putting them in a strong, healthy, breeding condition.

Antiseptic Solution Important.

The genital organs of all barren cows and heifers should be washed out with this solution until they conceive, whether they have a discharge or not.

This solution will prevent and overcome the acid secretions which kill the semen of the bull and prevent the cow from conceiving.

It will also prevent and destroy germs, soothe and heal all inflamed mucous membranes, thus preventing the formation of germs and the spread of the disease.



WOMB OF BARREN COW.

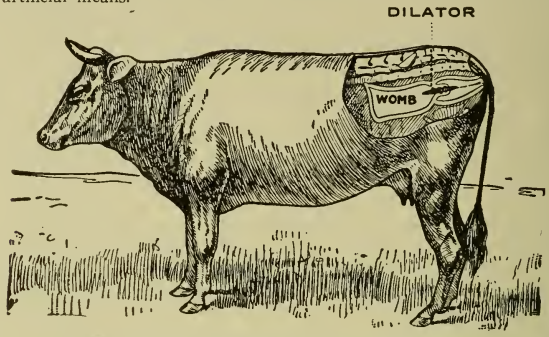
1. Vulva (external parts).
2. Uretha (opening into bladder).
3. Vagina (canal leading from vulva to womb).
4. Os (mouth of womb).
5. Neck of uterus (or womb).
6. Body of uterus (or womb).
7. Horn of uterus (or womb).
8. Ovaries (organ which produces ovum).

If the cow or heifer be cared for according to the demands of nature and fails to get with calf after being bred a reasonable number of times, she should then be classed as a barren animal. Upon examination of the neck of the womb it is usually found to be tightly closed. The neck of the womb contains three cartilage rings, which in this closed condition are found to be much contracted. This should be overcome by the use of a womb sound and dilator.

Artificial Means Necessary.

Insert the Womb Sound, then follow with the Womb Dilators which overcome this unnatural diseased condition by being placed as far into the neck of the womb as possible. These dilators contain a preparation which, when it comes in contact with the neck of the womb, or cartilage rings, is absorbed, the result being that the neck of the womb and cartilage rings relax their rigid and contracted condition. The dilator at the same time absorbs moisture, and slowly but firmly expands, and by so doing dilates the neck of the womb, rendering conception easy. In case a cow or heifer does not conceive after the use of one dilator, a second should be used, as perhaps the dilation of the second or third

ring had not been accomplished, and in case they do not conceive after the use of the second dilator, a third should be used, as this will open the third and last ring, in this manner overcoming barreness. After the third dilator has been used the cow should be bred at several different periods of heat, in the natural way, without any artificial means.



The Above Sketch Shows Womb Dilator in Position.

Directions for Using Womb Dilator.

Apply lard or vaseline to the hand, and introduce it into the vagina of the cow when she is in heat. Dilate the neck of the womb as much as possible with the Womb Sound, then withdraw the hand and introduce the Womb Dilator into the vagina and insert it into the neck of the womb; allow Dilator to remain there for eight or ten hours; then remove it by pulling on the attached cord. After removing Dilator the cow should be bred at once, and kept from the balance of the herd for twenty-four hours.

The Womb Dilator can be inserted by anyone; no professional skill required.

See Prescription No. 7 for Barren Cows, page 174.

BLOATING.

Bloating may be known by a swelling of the left flank. This swelling rises above the level of the backbone, and when tapped with the finger sounds like a drum.

There is always great danger of smothering. For this reason a Trocar should always be kept on hand.

Treatment.

The animal should be tied up and compelled to stand on a box or platform which will elevate front parts from six to twelve inches; give Laxotonic as directed, and place a gag in the mouth. In very severe cases they should be tapped by the use of a Trocar. The point of this operation is on the left side, just midway between the point of the hip and the last rib. Point the Trocar inward and downward. Dip Trocar in Germ Killer Solution before tapping. Give an injection of warm water per rectum (2 to 4 quarts).

To Prevent Bloating.

One box of Stokvigor should be mixed thoroughly with 25 pounds of salt and put in troughs in a sheltered place where the cows can have free access to it in passing to and from the pasture; this will not only prevent them from bloating, but will keep them in a healthy condition.

See Prescription No. 8, page 174.

BLACKLEG.

For sometime it was the general opinion that Anthrax and Blackleg were practically one disease, but upon later investigation it has been proven that they are two separate diseases, each one originating from a separate germ.

Blackleg is a germ disease, the germs entering the body, usually with food, but sometimes through scratches or sores in the skin. The germs are very hardy and live in the soil for a number of years. They may be carried long distances and be distributed upon lands heretofore uninfected. The grave of an animal that has died with Blackleg may keep a pasture infected for several years, and cattle grazing upon such a pasture are liable to contract the disease; a stream running near such a grave may carry the infection all along its course, and grass cut near the spot will communicate the disease to the animal fed upon it. The germs multiply so rapidly and are so easily conveyed, that an entire herd or neighborhood may become infected from a single case.

Owing to the short duration of the disease, the development of symptoms accompanying same are very noticeable, there being in the first stages loss of appetite, a general lack of ambition, and high fever. The most important symptom is swelling which appears in various parts of the body, usually on shoulders or thigh, and when handled cause a crackling sound due to the formation of gas underneath the skin.

Up to date there has been no positive cure found for animals thus afflicted, and for this reason the importance of vaccinating all animals with Blackleg Vaccine, which acts as a preventative, should be put into force whenever there is a possibility of animals having been exposed; or better still, all young stock from three months to two years old should be vaccinated once or twice a year, especially before being turned into low pastures for the summer.

See Prescription No. 9, page 174.

BLOOD POISONING.

This is a condition resulting from the absorption into the system of putrid, poisonous matter or pus, such as follows retention of the afterbirth in animals.

There will be a high fever, rapid but weak pulse and fast breathing. Loss of appetite, staring coat and delirium in the last stages of the disease.

Treatment.

Discover the cause, if possible, and if it is an abscess open it and wash it out with a solution of Germ Killer. Then inject Absorbent. If it is a sore, wash it with Germ Killer solution and apply Absorbent. Often internal treatment is very important and consists in reducing the fever and keeping up the action of the heart. This is done by the Fever Paste; give every three hours with two ounces of *good* whiskey.

See Prescription No. 10, page 174.

BOILS.

Boils in cattle usually appear about the size of a hen's egg.

The abscess begins as a small, round bunch and gradually increases in size.

Treatment.

Antiseptic poulticing should be done; apply Healing Oil twice daily until the core is formed, when the abscess should be opened and syringed out once or twice daily with Absorbent.

See Prescription No. 11, page 174.

BOWEL STOPPAGE.

(See Paralysis of Bowels, page 80.)

See Prescription No. 54, page 176.

BRONCHITIS.

Bronchitis is an inflammation of the mucous membrane of the bronchial tubes. It is commonly known as catching cold, but it is more often brought on by foreign bodies such as medicine, gruels, salts and oils being given to cattle as a drench. It is for this reason that cattle should never be drenched.

In Bronchitis there is usually a loss of appetite, a rise of temperature (generally 104 to 105), and the breathing is incomplete, short, quick and painful. The pulse is increased and often a painful cough is present.

Treatment.

The animals should be placed in a light, well ventilated box-stall, given feed of a laxative nature, such as grass in season and bran mashes, which latter should be made out of linseed tea. Give the animal plenty of water to drink. Apply white liniment to throat and lungs.

The fever should be reduced with the Fever Paste and the bowels kept open with Laxotonic, while warm water injections per rectum should be given by means of a flushing outfit. After this has been accomplished, the cow may be given Cow Tonic, and well cared for until fully recovered.

See Prescription No. 12, *page* 174.

CALF CHOLERA.

This is a catarrhal condition of the mucous membrane of the bowels. It is either a disturbance of the digestive organs or a symptom of some other trouble.

As a disease itself, it is an unnaturally increased action of the bowels, and at first may be nothing more than an attempt of Nature to relieve the stomach and bowels of their undigested, fermenting, offensive and irritating contents, which is marked by a thin, profuse, watery discharge from them. This indicates an irritated and overstimulated condition of the excreting glands of the bowels, causing an unnatural increased amount of liquid to be emptied into them, thereby mixing with the undigested fermenting contents, which is irregularly and rapidly expelled from the bowels. Such a condition shows a catarrhal and overstimulated condition of the mucous membrane of the digestive organs, which are very sensitive to irritating, or soothing ingredients taken into the system.

Scours Due to Indigestion.

The surroundings of the calf have much to do with the cause of this disease. Calves kept indoors suffer to a greater extent than those running in the open air and having the strengthening influences of sunshine, pure air and exercise. Closely crowded, filthy and bad smelling buildings are important factors in causing the disease.

All these causes tend toward reducing the activity of the digestive organs. As scours in calves is a common result of indigestion, it is therefore necessary that the digestive organs be kept in good, strong, healthy condition.

Indigestion Due to Many Causes.

Indigestion may occur from many different causes, as costiveness, a too liberal supply of milk; too rich milk; the furnishing of the milk of a cow long after calving to a very young calf; allowing the calf to suck the first milk of a cow that has been hunted, driven by road, shipped by rail, or otherwise violently excited; allowing the calf too long time between meals, so that impelled by hunger it quickly overloads and clogs the stomach; feeding from a pail milk that has been held over in unwashed (unscalded) buckets, so that it is fermented and spoiled; feeding the milk of cows

kept on unwholesome food; keeping calves in cold, damp, dark, filthy or bad smelling pens; the licking of hair from themselves or others and its formation into balls in the stomach will cause indigestion in the calf.

Simple Scours Develops Into Infectious Diseases.

The above are causes of simple diarrhœa or scours. This form in its early stages is not infectious, but is due to indigestion. As indigestion persists, however, the fermentations going on in the undigested masses become steadily more complicated and active, and what was at first the mere result of irritation or suspended digestion, comes to be a genuine infectious disease, in which the organized ferments (bacteria or germs) propagate, multiply and produce an infectious disease which is commonly called scours in calves, but properly called Calf Cholera. It is for this reason that it is transmitted and carried from one animal to another, thus causing untold losses to dairyman and breeder.

Disease Appears Suddenly.

Scours in calves or Calf Cholera in many instances differs from Diarrhœa in the adults and has special features of its own, taking the form of infectious intestinal catarrh, which is far more serious than the ordinary diarrhœa of the full grown animal. This disease generally appears suddenly. A perfectly healthy calf may be seized all at once, apparently, without any change in food or care. The symptoms of this infantile diarrhœa usually appear during the first two or three weeks of life. In many cases it occurs within a few hours after the animal is born, and the calf may die within from twenty-four to forty-eight hours.

Calf May Contain Germs at Birth.

It is common for the calf to be afflicted with scours immediately at birth, even before it has had time to suck or take any nourishment whatever.

The fæces or manure is very thin and watery. It has a sour, disagreeable odor, and is usually very light colored. The evacuations are frequent and expelled with force.

Prompt Attention Necessary.

The first indication of the presence of the disease is usually the soiled condition of the tail, loss of appetite, sunken eyes, sometimes the saliva flowing from the mouth, no attempt being made to swallow it. They have a staring coat, grow thin and lose strength rapidly. Death usually follows in from twelve to twenty-four hours unless prompt measures are taken to check the disease. If allowed to continue for any length of time the scouring will be accompanied by congestion and ulceration of the intestinal mucous membrane caused by the irritating secretions. As a result of this disease partial or total blindness is sometimes brought on.

How to Prevent Calf Cholera.

To prevent scours in calves, proper care should be given to the mother while she is pregnant, that she may be able to give birth to a healthy calf. As it is a germ disease, it is very important that the calf has none of these germs in its system before it is born. Calves from mothers which are affected with the disease of abortion are most apt to die of scours. It is therefore very necessary that the cows be kept free from the disease. Calves born afflicted with the germs of this disease in their system are in a position to spread the disease to other calves that they may come in contact with in the same herd, or if shipped, to other herds. This is another proof of its infectious nature.

To Prevent Loss.

After removing the afflicted calf from the rest of the calves, the stable should be thoroughly disinfected with Disinfectall, and the balance of the calves should be given Calf Cholera Remedy once daily with their regular feed, thereby keeping their digestive organs in proper condition so that they may digest and assimilate their food and thus escape the disease entirely.

To Care for Calf Properly.

The most important factor in the raising of cattle is their care while young.

Do not think that you are doing the correct thing if you are only managing to keep the life in a calf until it is three months old, and then have it get fat on grass before the winter comes. If you do this you are apt to have a lot of weaklings with their digestive organs destroyed, which will never make strong, healthy steers or cows and will not be good for either dairy, beef or breeding animals.

Profit in Proper Care of Calves.

It is but little more expense and care to give your calves the attention and food necessary to keep them free from scours and other diseases and start them off with digestive organs in good condition and a strong constitution. This can be done by feeding your calves Calf Meal. By doing this you will lay the foundation of a strong constitution upon which you can build a strong, healthy animal, and one which with proper care will make you money in whatever line it is put, whether beef or breeding.

Calves Contract Cholera.

A calf that is not infected with the germs of Cholera at birth may contract them later on from other causes, such as indigestion, close stabling and coming in contact with calves already thus infected. The germs of cholera, when once introduced into the system, propagate and multiply so rapidly that unless measures are immediately taken to destroy them and stop their ravages in the system death will ensue in a short time.

Proper Food Should Be Furnished.

The calf should receive proper food, free from fermentation, at regular intervals and in reasonable amounts. To this food should be added a good, reliable Calf Meal that will aid digestion and prevent fermentation, thereby preventing the formation of germs and causing a proper digestion and assimilation of the food.

This is an insurance against death by scours or calf cholera.

Treatment of Calf Cholera.

While it is much easier to prevent a disease than it is to cure it, still it is very important to know how to properly care for an animal after it is taken sick. This is certainly the case with a calf which has Calf Cholera or scours, for if it is not taken in hand promptly it will probably be too late to do anything for it, as the disease is apt to prove fatal in a short time.

When it is discovered that a calf has diarrhœa or scours it should be placed in a clean, warm, loose, well disinfected and ventilated stall, free from cold drafts, but admitting plenty of sunlight. It should receive a mild laxative to rid the bowels of the irritating contents, after which it should be given Calf Cholera Remedy. This remedy will arrest fermentation, mildly check the secretions, aid digestion and assimilation, thereby destroying and preventing the formation of germs, thus causing the bowels to be soothed and healed, enabling the calf to pass the fæces in a natural form. Roots of tail and hind quarters should be washed once daily with Solution of Disinfectall.

See Prescription No. 13 *for Calf Cholera, page* 174.

CALF INDIGESTION.

How to Know It.

The symptoms of calf indigestion are dullness, belching of gas from the stomach, sour breath, entire loss of appetite, colicky pain, and at first constipation, which later on develops into diarrhœa, the fæces being very offensive.

If constipation be present at the time of treatment, the calf should be given small doses of Laxotonic, but if diarrhœa be present at the time of treatment small doses of Calf Cholera Remedy should be given.

See Prescription No. 14, *page* 174.

CALVING.

The required time of gestation, or the period in which a cow carries her calf, is nine months, at which time special attention should be given her. Place her in a loose box-stall with plenty of bedding; give her feed of a laxative nature; the drinking water should have the chill taken from it, and her bowels should be kept in a natural condition by giving her Laxotonic.

After the labor pains have appeared it would be well to keep watch of her, and if she does not deliver her calf within a reasonable length of time—say, one hour—it would be advisable to make an examination. Upon doing so, if the calf be in a natural position, the nose and front feet are the first to be felt. If such be the case, the attendant may assist the cow in delivering her calf by pulling on the front feet. Any other position would indicate an unnatural condition of calving. When calf is born the naval cord should be tied two inches from the body with a string soaked in Umbilicure; the naval cord should then be cut about four inches from the body, Umbilicure should be applied three times daily to the naval cord until it dries up and drops off. This will prevent calf from becoming infected with naval diseases. The calf should be allowed to remain with the cow three or four days. Important in connection with this article is the article of Naval Diseases in Calves.

See Prescription No. 16, *page* 174.

Casting the Withers—Or Expulsion of the Womb.

This is a weakness which sometimes follows calving. The first sign is that of straining, and later the presence of part or the whole of the womb. In this case the womb should be placed upon a blanket; if the cow is lying down, which she usually is, wash off thoroughly with the Antisepto Solution; after doing this the womb may be done up in a sheet dipped in the Antisepto Solution and held up by an attendant, while the operator carefully pushes it back into its place. It must not only be placed back, but the full length of the arm must be inserted, so that it turns the horns of the womb back into the natural position, and, unless this is done, the cow will continue to strain.

To prevent the cow from expelling it again, she should be placed upon a plank door four feet wide and six feet long, with laths nailed across to prevent her feet from slipping when she stands upon it. The end of the door on which the hind parts are should be raised from six to eighteen inches, and she should be compelled either to lie down or stand up on this door until all straining ceases and she fully recovers, usually requiring from one to three days. During this time her bowels should be kept loose with Laxotonic and her appetite kept up with Cow Tonic.

See Prescription No. 18, *page* 174.

CASTRATING.

In castrating calves or bulls the scrotum, or bag, should be washed with the Germ Killer solution. After the operation the scrotum should be well oiled with the Healing Oil.

Calves should be castrated at the age of from one to three weeks. Bulls may be castrated at any age.

See Prescription No. 19, *page* 174.

CATARRHAL FEVER OR PINK EYE.

Catarrhal Fever is usually known as Pink Eye, Distemper and many other diseases of a catarrhal nature. This disease involves the respiratory or breathing organs, the alimentary canal, or digestive organs. The head, eyes and genital organs are frequently affected. This disease usually comes on with a chill, followed by a fever. The head droops, the skin is hot and dry, and the coat staring, frequently very dull in appearance. The secretion of milk usually stops. Loss of appetite and loss of flesh are invariably noticed, and sometimes the eyes become blue, so that the animal may be hardly able to see. In other cases the cow becomes totally blind unless prompt and proper treatment is given. Tears may be noticed running down the face, the lids are swollen and inflamed; sunlight is painful to animals thus afflicted, causing them to close their eyes and keep them closed continuously.

Treatment.

The eyes should be washed with the Antisepto Solution, full strength, and the Eye Lotion should be injected into the eyes with a small, hard rubber syringe having a soft rubber nozzle. The temperature should be taken, and if found to be high the Fever Paste should be given, and the Cow Tonic should be given during the entire treatment. The stable in which the animal is kept should be thoroughly disinfected with Disinfectall.

See Prescription No. 20, *page* 174.

CHOKING.

This means the lodgment of a foreign obstacle in the swallowing tube or gullet. It is known by slobbering, distressed breathing, and an accumulation of gas, which may be noticed in the left side or paunch.

Treatment.

Stand the cow with her head down hill, pressing the head downward as much as possible, while the attendant squeezes as much saliva out of the gullet as possible. Then allow her to raise her head and give her half a dose of oil (half pint), giving but one swallow at a time. If she is not relieved in from ten to thirty minutes, a one-inch rubber hose five or six feet long may be passed gently down the gullet. This will force the obstacle into the stomach, at the same time allowing the gas to escape. On account of the extensive stretching of the bowels due to the collection of gas, the Laxotonic should be given to overcome paralysis of the bowels, which usually follows.

See Prescription No. 21, *page* 174.

Clean—Failure to.

A cow should clean within three hours after calving. In case she fails to do so she should receive plenty of hot mashes, boiled oats, warm water, and be given the Cow Cleaner. The vagina should be washed out with Antisepto Solution and the cow tied up with a halter to prevent eating the afterbirth. After she has cleaned and is through discharging she may be placed with the balance of the herd and her milk be ready for use. (See Retention of the Afterbirth, page 54.)

See Prescription No. 17, *page* 174.

COLD.

A cow may take cold at any time, and it is apt to affect any part of the body, but it usually affects the head, throat or lungs.

Treatment.

If it affects the throat or lungs apply White Liniment to the throat or lungs, or both, and give the Fever Paste. Keep the bowels open with Laxotonic.

See Prescription No. 22, page 175.

COLIC OR CRAMP.

This is usually brought on by drinking cold water or eating indigestible food. The animal will be noticed to be uneasy, getting up and lying down frequently, and showing pain.

Treatment.

Give colic drench and follow with Laxotonic.

See Prescription No. 23, page 175.

CONSTIPATION IN CALVES.

Constipation is more often noticed in newly born calves. There may be a continual switching of the tail, uneasiness, and an effort to empty the bowels. If Nature fails to do its part, the treatment is to give on the tongue a small dose of castor oil (from one to three ounces). Give Laxotonic in small doses. A pint of warm water injection should also be given with a flushing outfit per rectum.

The oil and injection may be repeated once daily until the desired results are obtained.

See Prescription No. 15, page 174.

CONSTIPATION OR STOPPAGE OF THE BOWELS IN CATTLE.

This is one of the most common ailments that cattle are subject to; at the same time more cattle die from this cause than any other, for the simple reason that constipation is due to paralysis of the bowels.

Constipation is to be regarded as the sign of another disease, rather than a disease of itself. It occurs in almost all general fevers.

In order to overcome constipation the treatment must be applied to overcome the ailment which causes it. Seventy-five per cent of the cases of constipation are due to partial paralysis of the bowels. In this case the bowels require a laxative and tonic, and not a physic, for if the bowels are paralyzed a physic will have a tendency to cause irritation, congestion and inflammation. For this reason it is dangerous to give a cow salts or oil.

Treatment.

A cow thus afflicted should be given plenty of drinking water with the chill taken from it, bran mashes made from flaxseed tea, and Laxotonic according to directions. Also inject several quarts of warm water once or twice daily per rectum by the use of a flushing outfit, and give the animal a reasonable amount of exercise.

See Prescription No. 24, page 175.

COW-POX.

This is a disease communicable from one cow to another. This disease is ushered in by a slight fever, which, however, is usually overlooked, and the first sign is tenderness of the teats. On examination they will be found to be redder and hotter than normal, and at the end of two or three days there appear knobs like little peas, pale red in color, and they gradually grow larger, so that at the end of a

week they may be an inch in diameter. The yield of milk is diminished. From the seventh to the tenth day the eruptions form into blisters with depressions in the center and raised margins. The blister is, however, divided into several pockets, and in order to allow all the contents to escape each pocket has to be opened separately. If the pocket forms on the surface, where there is a thick coat of hair, it does not form a blister, but oozes out through the skin in amber or straw-colored masses. In a few days after this collection forms it turns yellow and the scab dries up and falls off and leaves a distinct pit in the skin. The animal suffers intense agony while being milked, as the scabs are cracked and broken by the hands of the milker.

Treatment.

In severe cases give Cow Tonic internally. Badger Balm should be applied to all affected parts of teats and udder, after washing same with a solution of Germ Killer; apply Absorbent to all abcesses.

See Prescription No. 25, page 175.

DEHORNING.

As dehorning cattle is rather a cruel but necessary operation, it is advisable to prevent the horns from growing rather than removing them after they have once grown.

To prevent the horns from growing on calves, it is necessary to apply a dehorning remedy when the calves are from one to ten days old.

The operation is performed as follows: The little animal is caught and gently laid over on its side, in which position it is easily held by one assistant, while the operator clips the hair off of the little knobs where the horns appear. He then applies the remedy thoroughly to a spot not to exceed the size of a quarter of a dollar. The calf is then turned over and the other side treated in a like manner.

If this treatment is properly applied, no horns will ever make their appearance. All cattle should be dehorned, chiefly to protect them from each other. If unfortunately an animal has not been dehorned while still a calf, the dehorning clipper may be resorted to. This operation is performed by placing the animal in a stanchion and fastening the head tightly, then applying the dehorning shears, pretty well down onto the head so as to be sure and remove enough of the horn to prevent any further growth. With one sweep of the dehorning shears the horn should be removed. Apply a little healing Oil after the operation to prevent any bad results from following. Cool weather should be selected for this operation.

See Prescription No. 26, page 175.

DIARRHOEA IN CATTLE.

Diarrhœa in cattle is an indication of indigestion. It comes on at all seasons of the year, but it is more liable to come on during the grass season, and is more prevalent during the wet season rather than the dry, on account of the heavy growth of grass, this being hard to digest.

Treatment.

The animal should receive a little ground feed two or three times daily, in which should be given moderate doses of Cow Tonic. The drinking water should be clear and pure, and given warm and sparingly. In bad cases give Calf Cholera Remedy.

See Prescription No. 27, page 175.

EYE DISEASE.

Sore eyes may be brought on from many different causes. It may be due to injuries or to catarrhal infection. When due to the latter, the whole herd may be thus afflicted and oftentimes is.

Treatment.

A sore eye due to an injury should be bathed three times daily with a quart of Antisepto Solution, full strength, and followed with Eye Lotion injected after each bath. This same treatment should be used when sore eyes are due to a catarrhal infection or Pink Eye. And in addition to this treatment the cattle should have free access to a liberal amount of salt, in which should be mixed Stokvigor.

If both eyes of the animals be affected and it be difficult for them to see, it is advisable to keep them in a dark stable during the day and let them graze at night, on account of the strong sunlight being painful to the eyes.

See Prescription No. 28, page 175.

FEVERS.

In order to detect whether an animal has a fever or not, it is always advisable to use a Fever Thermometer, and if the temperature be higher than normal it indicates a fever. It may be due to many causes, such as inflammation of the lungs, inflammation of the throat, inflammation of the udder, etc., etc. However, the fever should be controlled and reduced by giving the Fever Paste according to directions, and the bowels should be kept loose with the Laxotonic (per mouth), and injections (per rectum) of from two to four quarts of warm water once or twice daily; also apply the White Liniment to the inflamed parts, such as the throat or lungs, or both.

Every stock raiser should own a Veterinary Thermometer, for it may save him considerable expense.

See Prescription No. 29, page 175.

FISTULA.

A fistula is a pus cavity, containing matter, and is commonly known as a running sore. It may appear on any part of the body, limbs, or feet.

Treatment.

Open the parts so as to allow the matter to flow freely; wash out the cavity once daily with a solution of Germ Killer, and follow by injecting a quantity of Absorbent and Healing Lotion, alternately, according to directions and according to the size of the cavity. Give Cow Tonic internally according to directions to tone up the system.

See Prescription No. 30, page 175.

FOOT DISEASE OR SORE FEET IN CATTLE.

Sore feet in cattle may be due to several causes, but the one kind which the ordinary dairyman or breeder has to contend with is due to either standing on cement floors or running in wet, boggy pastures. The feet usually crack between the claws, swell and become inflamed. In either case the treatment is the same, and consists in washing the sore or inflamed feet with a solution of the Germ Killer (one ounce to a gallon of water), and applying both Healing Lotion and Absorbent, alternately, to all open sores or inflamed parts. If a growth of proud flesh appears between the hoofs or on any part of the limb, it should be overcome by frequent use of the Healing Lotion, and the inflamed or sore feet should be placed in Antiseptic Poultices, once daily, until all inflammation and lameness have been overcome. Use a Poultice Boot.

How to Make a Poultice Boot.

Take a round piece of sole leather six or seven inches in diameter and as thick as you wish it; then stitch a heavy canvas to the edges of this sole leather and have it run up about twelve inches.

How to Apply the Poultice.

Put enough Antiseptic Poultice into the boot to cover the foot nicely, then fasten the canvas or boot on by the use of strap instead of strings, as strings cut in too much.

The Cow Tonic should be given as directed to tone up the system.

See Prescription No. 31, *page* 175.

FOUNDER.

Founder is not of frequent occurrence in cattle, but it does occur to overfed or show cattle. It resembles a stiffness, but upon feeling of the hoofs they will be noticed to be hotter than usual; lying down considerably is another symptom.

Treatment.

If this be noticed in the early state it is advisable to bleed the animal by drawing from four to six quarts of blood, according to the size of the animal. The bowels should be loosened up with Laxotonic (per mouth), and warm water injections (per rectum), and the Fever Paste given to reduce the fever. The feet should be poulticed with Antiseptic Poultice, which should be changed once daily. (Use the Poultice Boot for applying poultice.) The animal should be fed sparingly with food of a laxative nature. Exercise should be given as soon as the animal is able to take it.

See Prescription No. 32, *page* 175.

FROST BITES.

This should never occur, but sometimes it is unavoidable, and the treatment is to wash the parts thoroughly with a solution of Germ Killer and apply the Badger Balm to the frozen parts.

See Prescription No. 33, *page* 175.

GARGET—CAKED UDDER OR INFECTIOUS MAMMITIS.

Garget or caked udder is a very common but annoying disease, and is due to many causes, the most common being a condition of the blood, and for this reason Cow Tonic should be given freely according to directions. The udder should be thoroughly rubbed twice daily with Badger Balm and White Liniment. In severe cases apply an Antiseptic Poultice by placing a band around the cow's body and udder. Keep the animal well bedded to prevent the udder coming in contact with any dampness. Keep the bowels open by giving warm water injections (per rectum). If the caked udder takes on an infectious form, then the milkers should wash their hands in a solution of Germ Killer after milking each cow, as this will prevent the spread of the disease. Stables should be disinfected with a good germ destroyer, such as Disinfectall.

How to Bandage Cow Suffering from Caked Udder.

See Prescription No. 34, *page* 175.

GENITAL DISEASE.

As the genital organ diseases are usually due to retention of the afterbirth, this subject is fully described and the treatment fully given under subject of Afterbirth Retained in foregoing pages.

See Prescription No. 35, *page* 175.

GESTATION PERIOD.

As it is pretty well known by most people that the gestation period of a cow is nine months, or 280 to 285 days, it will be needless for much to be said on this subject, as gestation table may be seen on page 20. (A calf born on the 210th day may live; also 336th.) A cow failing to carry her calf to the period of 280 days may be considered an abortion, and this subject is thoroughly described under heading Abortion.

GONORRHOEA IN BULLS.

Gonorrhœa is an infectious catarrhal discharge of the genital organs. It is brought on by coming in contact with living germs, such as serving a cow afflicted with infectious abortion, or one that has retained the afterbirth, and comes in heat while she is still discharging.

Treatment.

All herd bulls should have the sheath washed out after each service with a solution of Antisepto to prevent becoming affected and contracting gonorrhœa. It is due to this disease that infectious abortion is spread.

See Prescription No. 36, *page* 175.

GRASS STAGGERS.

Grass Staggers is a disease brought on by overloading the stomach with grass. As soon as the stomach becomes overloaded, indigestion sets in, which interferes with the brain, causing the animal to walk with an unnatural and unsteady gait, usually walking in a circle, and oftentimes staggering and falling. If she is filled with gas, she should be tapped with a cattle trocar to prevent death from smothering. If noticed in time, or before she goes down, small doses of Laxotonic should be given according to directions, until she recovers. A gag may be placed in her mouth.

See Prescription No. 37, *page* 175.

GRUBS OR WARBLES IN SKIN OF CATTLE.

Grubs or Warbles in the skin of cattle are caused by a fly which deposits its egg during the summer months in or on the skin of the animal, and the egg is retained in the winter months in a little round sack beneath the skin, having a small opening through which the larva escapes in the early part of the following summer and develops into a fly.

Treatment.

To overcome and prevent the development or hatching of this fly, the grub which is found beneath the skin of the animal along the back, and is known by a swelling about the size of a boil, should be opened by squeezing; then inject a little Healing Oil a few times by the use of a small oil-can. The time to do this is during the early part of spring.

See Prescription No. 38, *page* 175.

HAIR BALLS IN CATTLE.

This habit is formed without any apparent cause and animals thus afflicted lick themselves, or lick one another, and by so doing the loose hair which is gathered by the tongue passes down the gullet into the digestive organs where it at first forms a small ball, which becomes enlarged by the gradual collection of hair which is swallowed by the animal.

These balls differ in size from that of a small marble to that of an orange, and they may be retained in the digestive organs without causing any noticeable inconvenience or disturbance unless perchance they enter into the outlet of the organ and prevent the passing of the contents into the next stomach, which soon results in a disturbed condition of the digestive organs and prompts the animal to act as if afflicted with colic or acute indigestion.

A desire for salt will cause cattle to lick one another to excess.

See Prescription No. 208, *page* 175.

HARD MILKERS.

This trouble is due to an abnormal contraction of the sphincter muscles at the point of the teat, an affection which often greatly reduces the value of a previously valuable cow, because nobody wishes to purchase or own one that is known as a hard milker; but if the stock-owners knew how easily this trouble can be overcome, they would never think of disposing of a hard milker at a sacrifice, as so many do.

The mere fact that a cow is a hard milker is no indication that her yield of milk is deficient in quantity; but because she does not yield her milk readily, she is generally not milked thoroughly by the disgusted milker, who thereby leaves a quantity of milk in her udder, that should have been drawn out.

Stockmen who know how to treat such cases often buy valuable cows at a greatly reduced price, because they are hard milkers; but by the use of a Teat Plug and a few treatments for hard milking, they cause them to become splendid, easy milkers, thereby increasing their value many times the cost of the treatment. A Milking Tube should never be used in such cases, because of the danger of infection, and the results are not as good as from the Teat Plug.

Treatment.

Wash the ends of the teats thoroughly with Germ Killer solution, dip the Teat Plug into a clean solution of the same strength and insert it into a little Badger Balm, then introduce it into the teat as far as possible, so as to pass enlargement of the teat plug into the teat far enough to admit the bulb, which stretches the contracted muscles and retains the plug. The teat plugs should be allowed to remain in the teats from one milking to another, until milking is made easy, requiring from three to six days. Do not use the milking tube instead of teat plug, as it will admit the air and is liable to cause infection.

See Prescription No. 39, *page* 175.

INDIGESTION.

It is pretty well understood by most stock owners that indigestion may be due to many causes, such as cold water, musty, bulky, fibrous food, and irregular feeding. This can be overcome by giving Cow Tonic according to directions, and the bowels should be kept open by giving Laxotonic internally and warm water injections (per rectum.)

See Prescription No. 40, *page* 175.

INFLAMMATION OF THE LUNGS.

Inflammation of the lungs may be known by the presence of hard breathing. The animal stops as though exhausted and extends the neck and head; dilates the nostrils and turns the limbs or elbows out on either side of the body, while at the same time she will appear to be very much distressed. The breathing may be rapid and short. The temperature should be taken and is usually found high.

Treatment.

Give the Fever Paste according to directions and apply the White Liniment to both sides of the chest. Give warm water injections (per rectum) twice daily, and the bowels may be kept open by giving Laxotonic according to directions. In severe cases apply the Antiseptic Poultice to the chest (both sides) and to the throat, if need be. Give bran mashes made of linseed tea.

See Prescription No. 41, *page* 175.

INFLAMMATION OF THE WOMB.

Inflammation of the womb is a very serious and obstinate disease.

The treatment is to give Fever Paste according to directions and warm water injections of Antisepto solution per vagina three times daily; introduce a half pound of lard after each injection. The bowels should be kept open by giving Laxotonic according to directions.

See Prescription No. 42, *page* 175.

INFLAMMATION OF THE UDDER.

Give Cow Tonic according to directions and wash the udder with a warm solution of Germ Killer twice daily, and apply Badger Balm or White Liniment well rubbed in; then apply Antiseptic Poultice. Keep the animal well bedded to protect the udder from coming in contact with any dampness. (See picture "How to Bandage a Cow.")

See Prescription No. 43, *page* 175.

INFLAMMATION OF THE TESTICLES.

This may be due to an infection or an injury. In either case the testicles should be washed with a warm solution of Germ Killer and then thoroughly annointed with Badger Balm; then apply Antiseptic Poultice. The animal should receive Cow Tonic according to directions to purify the blood and tone up the system. The animal should not be used for breeding purposes during the treatment.

See Prescription No. 44, *page* 175.

INFLAMMATION OF THE TONGUE.

This will be known by a swelling of the tongue, slobbering from the mouth, and inability to swallow naturally.

Treatment.

Fever Paste in small and repeated doses should be given. Give bran mashes made from linseed tea and apply Antiseptic Poultice to the throat.

See Prescription No. 45, *page* 175.

INFLAMMATION OF THE JOINTS.

This is very common in all joints, but is more so in the joints of the feet, and the treatment is to wash the affected joints with a solution of Germ Killer; thoroughly rub in Badger Balm and apply Antiseptic Poultice once daily.

See Prescription No. 46, *page* 175.

ITCH.

Itch is a disease of the skin and may be due to parasites or other causes. The treatment is to wash the parts thoroughly with a solution of Germ Killer, and apply Skin Ointment according to directions, thoroughly rubbed in. The animal should receive Cow Tonic according to directions to purify the blood and tone up the system.

See Prescription No. 47, *page* 175.

JOHNE'S DISEASE OR BACTERIAL DYSENTERY.

Bacterial Dysentery is a slow, contagious cattle disease existing in the United States for a number of years. The first case noticed by the writer came to his attention some years ago.

There is perhaps no disease whose outward appearance resembles tuberculosis more than Bacterial Dysentery. There is the same continual and gradual wasting away of the tissues until an animal, which was once in a healthy condition, becomes a walking skeleton.

There is always a looseness of the bowels, as the name of the disease would indicate, and an animal is more apt to show rapid emaciation immediately after calving than at any other time. In fact, the period of calving is usually the starting of Bacterial Dysentery.

Past records show that this disease is more apt to afflict imported animals than our own native cattle; and the fact that a great many of the imported cattle are afflicted shortly after being imported, would indicate that they were affected before arriving in the United States, the disease developing after their arrival.

If an animal is bred while in an advanced stage of this disease, conception is not likely to occur; but if she does conceive, in rare cases the fœtus may be carried a few months, when it is liable to die (owing to the low vitality of the mother), become mummified and be carried as long as the animal lives. The author has witnessed a number of such cases.

Owing to the fact that this is a contagious disease, it is advisable to remove animals thus afflicted from the balance of the herd and thoroughly disinfect the stables with Disinfectall. At the present writing there is no treatment known that has proved successful in overcoming Bacterial Dysentery.

This disease is not common, but does exist in the United States at the present time.

LEUCORRHOEA OR WHITES.

Leucorrhœa or whites in cows is a catarrhal disease of the genital organs and is usually brought on by infectious abortion or retention of the afterbirth. They will be noticed to have a white or dirty discharge from the vulva, usually of an infectious nature.

Treatment.

The animal should receive Breeding Tonic internally and the vagina should be washed out with a solution of Antiseptо until all discharges cease.

See Prescription No. 48, *page* 176.

LEAD POISONING OF CATTLE.

Lead poisoning of cattle is oftentimes mistaken for rabies or vice versa. It usually comes from their having licked freshly painted mangers or buildings, and thus swallowing compounds containing white lead.

In several instances cattle have been poisoned by eating silage from a silo painted inside with lead paint shortly before filling.

Water drank from lead pipes or held in lead lined tanks may cause poisoning. Old paint cans thrown into the pasture after a barn or house has been painted sometimes produce lead poisoning in cattle, as cattle usually have a mania for licking paint.

The symptoms of cattle afflicted with lead poisoning are generally dullness and if standing up, they usually go around in a circle, always going in the same direction, indicating that only one-half of the brain is affected.

While lying down they keep the head turned toward the flank. There is usually a rumbling in the abdomen, indicating a disturbed condition of the alimentary canal, loss of control of the limbs when walking, twitching of the jaws, moving in a circle, convulsions, delirium, violent bellowing, followed by stupor and death.

The symptoms generally extend over considerable time, but may end in death after twenty-four hours.

See Prescription No. 209, *page* 176.

LEAKY TEAT.

This is a term usually applied to a cow's teat having too large an orifice or sphincter at the point, or on the side of the teat, allowing the milk to escape nearly as rapidly as it is secreted into the milk channels.

The same term may be applied to a teat that has a false opening on the side of the teat, sometimes caused by barb wire injuries. This opening allows the milk to escape as rapidly as it is secreted by the glands, or, at milking time the milk is forced out through the side instead of the end opening, which makes it very disagreeable and unsanitary.

A cow thus afflicted is not a very salable animal; in fact one familiar with cattle would not consider the purchase of such an animal at any price.

The proper time to apply treatment to this ailment is not during the period of lactation, but on the contrary during the time of rest, after a cow has been dried up.

The most practical method for treating such cases is to cauterize the opening with either caustic potash, or a hot knitting needle, then wash the teat with a solution of Germ Killer and apply Healing Oil.

See Prescription No. 67, *page* 176.

For temporary relief of a leaky teat, apply collodion after milking.

LUNG FEVER.

(See Inflammation of the Lungs, page 75.)

See Prescription No. 41, *page* 176.

LUMP JAW, OR ACTINOMYCOSIS.

The first appearance of Lump Jaw is either an enlargement of the jaw bone or an enlargement of the glands of the throat, which are just back of the angle of the jaw and at first they may be loose from the jaw, but later on become adhered.

These swellings on the jaw or of the glands when broken will discharge a yellowish sticky pus which sometimes contains hard yellow granules or fragments of bone. As a result of the swelling, the teeth may be pushed out of their natural position and consequently an animal cannot masticate its food properly, and will soon run down in flesh; the decaying of the bone oftentimes results in the destruction of the tooth sockets so the teeth will often fall out.

Every swelling on the jaws of cattle should be regarded as possibly Lumpy Jaw, if the definite cause for it is not known. The swellings are sometimes noticed to remain for some time of the same size, but sooner or later the inflammation will cause the swellings to increase.

This disease is due to a germ, and when pus discharged from any of these enlargements falls on the grass or feed of other stock, such animals are liable to contract the disease. In this manner a whole herd may be ruined if the treatment is neglected.

Treatment.

When there is no external opening apply Absorbent until the enlargements are all absorbed or an opening produced.

When there is an external opening on the surface of the swelling Absorbent should be injected into the cavity, or a small strip of white cloth may be dipped into the Absorbent and stuffed into the cavity, leaving only the end of it hanging out.

On account of the run-down condition of the animal. because of the inability to masticate the food, the Cow Tonic should be given to aid digestion, increase the appetite and hasten recovery.

In extremely bad and stubborn cases a drachm of Iodide of Potash may be given in the drinking water twice daily, but never drench .

See Prescription No. 49, *page* 176.

MAMMITIS.

(See article on Garget or Caked Udder, page 72.)

See Prescription No. 34, *page* 176.

MILK BLUE.

Blue milk is due to an impoverished condition of the blood, and the treatment consists of giving plenty of nutritious food, to which should be added the Cow Tonic.

See Prescription No. 50, *page* 176.

MILK FEVER, OR PARTURIENT PARESIS.

The stall which a cow with milk fever occupies should be well drained and plenty of bedding should be placed under her. Unless the cow is standing, place her on her broadside and wash off her udder and teats with a solution of Germ Killer. Dissolve one tablespoonful of Milk Fever Remedy in two quarts of warm water which has been boiled and cooled to blood heat; then inject one-fourth of this solution in each of the four teats by the use of the Milk Fever Injector, which must be thoroughly washed in a solution of Germ Killer to prevent infection of the teats or udder. After injecting the solution into each teat, use a small air pump similar to a bicycle pump or place the lips to the end of the rubber tube and inflate the udder as much as possible by blowing forcibly into it until it is fully distended; then tie a small piece of tape around the point of the teats to keep the air from escaping. Remove the tape as soon as the cow gets up on her feet. After the udder has been thus treated, raise the cow upon her shoulder and prop her up by the means of bales of hay or bags of grain. Never allow her to lie flat on her side, except while washing and treating the udder. Give her a teaspoonful of Laxotonic, dry on the tongue (never drench a cow), every three hours until the cow is up and the bowels move naturally; then continue with the Laxotonic every six hours until the contents of one box has been

Treating a Case of Milk Fever.

given her, following the Laxotonic with the Cow Tonic to bring her back to her natural flow of milk. Keep a blanket on her until she recovers.

The air should be stripped out of the teats a few hours after she is up, and she may be milked a little twice daily until she gives a natural flow of milk, when she should be milked thoroughly dry at each milking. The feed should be of a laxative and nutritious nature, the chill taken from the drinking water for several days and a reasonable amount of exercise should be given her.

See Prescription No. 51, *page* 176.

MILK BLOODY OR STRINGY.

Bloody or stringy milk are both due to a derangement of the system, and the treatment consists of giving Cow Tonic as directed, which will alter the condition of the blood to such an extent as to overcome this ailment. Give good, clean, nutritious feed—including bran mashes made of flaxseed tea.

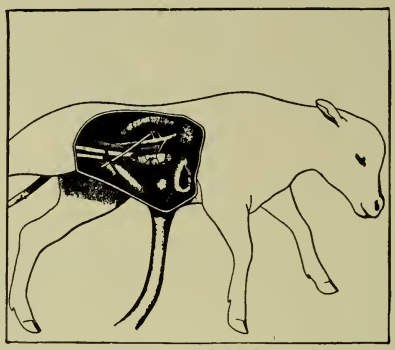
See Prescription No. 52, *page* 176.

NAVEL DISEASE OF CALVES.

This is a germ disease which affects the navel cord, occurring often soon after birth, due to the parts becoming infected by germs, which not only produce soreness and inflammation of the navel, but also enter the body at this point, causing a swelling of the joints. This results in lameness and a gathering of matter, or pus, reducing the vitality of the animal, causing a lack of ambition, a dull sickly appearance, indigestion and scours. Unless proper treatment is promptly given the disease will cause a sloughing of the joints or death by scours.

Treatment of Navel Diseases of Calves.

It is better to prevent this disease than to treat it after it has appeared. This can be done by thoroughly disinfecting the stall in which the cow calves, and when the



Navel or Umbilical Cord.

calf is born the navel cord should be tied with a string dipped in Umbilicure, and Umbilicure should be applied to navel cord until it dries up and drops off, and the wound heals.

See Prescription No. 53, *page* 176.

PARALYSIS OF THE BOWELS.

Paralysis of the bowels in cattle is a very common but seldom recognized ailment, even by the most skilled persons, and is the result of an overloaded and overworked condition of the bowels. It is generally mistaken for constipation, for the reason that its symptoms are very similar; therefore it is difficult for any one but an expert to recognize the difference. The treatments for the two diseases are entirely different. A remedy that will overcome constipation will not cure paralysis, but one that will overcome paralysis, will cure constipation.

As fully 75 per cent of the cases of stoppage of the bowels is due to paralysis and only about 25 per cent due to constipation, it would be advisable for all stock owners to be on the lookout for paralysis when stoppage of the bowels is met with.

If a physic be given a cow afflicted with paralysis of the bowels, they are liable to be irritated by the treatment and, unable to throw off their poisonous, irritating contents, inflammation often ensues, when death will soon follow. On the other hand, if a cow, afflicted with paralysis of the bowels, be given a laxative and tonic which loosen and tone the bowels without any irritation whatever, the results will be favorable. Should there be constipation without paralysis this treatment will also be beneficial, for the bowels will be loosened and toned thereby.

Treatment.

In all forms of stoppage of the bowels in cattle, whether due to constipation or paralysis, give Laxotonic according to directions; at the same time give from two to four quarts of luke-warm water per rectum once or twice daily to empty the small intestines.

Give the animal bran mashes made of flaxseed tea, feed sparingly, remove the chill from the drinking water and give moderate exercise when able to take same.

See Prescription No. 54, *page* 176.

PARALYSIS OF THE HIND PARTS.

This is a disease of the nerves which is usually present and follows milk fever, but does sometimes occur independent of anything else, and the treatment consists in giving Laxotonic, both to keep the bowels open and to overcome the paralysis. The animal should be given warm water injections (per rectum) and should be turned several times daily from side to side. Apply White Liniment to the spine. Give nourishing and laxative food and plenty of water. The urine should be drawn if she is unable to pass it.

See Prescription No. 55, *page* 176.

PINK EYE.

(See Catarrhal Fever, page 68.)

See Prescription No. 20, *page* 176.

RABIES IN LIVE STOCK.

Rabies is a contagious germ disease which is liable at all times to attack horses, cattle, sheep, pigs and dogs, as well as a number of other warm blooded animals. This disease is more apt to be brought on by the bites of mad dogs than from any other source.

While this disease is known in live stock as rabies, it is known in mankind as hydrophobia. There is great danger in handling animals thus afflicted as a person is liable to become infected by being bitten or scratched, or from saliva getting into sores on the hands.

The first symptoms which usually appear when an animal is affected with rabies, are nervousness and restlessness, and when cattle are thus afflicted they are liable to do a great deal of bellowing. They slobber considerably, and strain as though they were constipated.

When turned loose they are liable to bunt or hook each other, or other animals, or in fact any object with which they may come in contact. They lose their appetite, more on account of inability to swallow, due to partial paralysis of the throat, than a lack of desire for food.

Horses thus afflicted will kick and bite, chew their mangers, and tear everything they can get hold of with their teeth, and have been known to have torn their own flesh from their bodies, during the last stages of the disease.

As rabies is an incurable disease, it is advisable to destroy an animal thus afflicted, as early as possible, to avoid the intense pain and suffering that it would otherwise endure.

RED WATER IN CATTLE.

This is a common affection among cattle in certain localities, and is more common in Europe than elsewhere. It may be caused by injuries of the back; eating irritating plants; being exposed to low, damp districts, etc. But the most common form of red water usually infects the whole herd. This is the form that most breeders have to contend with. The symptoms are bloody urine, associated with a high fever, and a milking cow may be troubled with a frothy condition of the milk, this having a reddish tinge.

Treatment.

Rid the bowels of the irritating contents, and by so doing relieve the kidneys. which are always overtaxed. It is their overtaxed condition which produces the hemorrhage, and the result is red urine, or red water. To relieve the kidneys of their irritated and overtaxed condition, Kidney Aid should be given. The bowels should be emptied by giving two to four quarts of warm water (per rectum). A

complete change of feed is necessary. This should be of a nutritious and laxative nature, giving plenty of bran mashes, made from flaxseed tea, and allowing the animals to drink all the flaxseed or slippery elm tea that they want.

See Prescription No. 56, *page* 176.

RHEUMATISM.

Rheumatism is a disease due to an acid in the blood, and usually affects either the muscles or joints, or both.

The treatment consists in giving Cow Tonic, as directed, and applying White Liniment to affected parts. The feed should be nutritious and of a laxative nature. In bad cases, poultice joints with Antiseptic Poultice.

See Prescription No. 57, *page* 176.

RINGING BULLS.

The animal should be placed in a stanchion, a rope placed around the neck or horns and a loop around the nose; then fasten the rope to one side, so as to keep him from swinging his head from side to side. The operator then takes the cattle trocar and passes it directly through the partition between the nostrils. The bull ring should be dipped in Healing Oil, then passed through the opening and joined in the usual manner. *See Prescription No.* 58, *page* 176.

RINGWORM.

Ringworm is due to a parasite which affects the skin only. It has the appearance of a gray, crusty condition of the skin, which soon destroys the hair follicles, and the hair falls out, leaving the skin in a dirty and scabby condition.

Treatment.

Give Cow Tonic internally, and wash off the affected parts with the Germ Killer solution and apply Skin Ointment, thoroughly rubbing it in.

See Prescription No. 59, *page* 176.

SCOURS IN CALVES.

(See Calf Cholera, page 64.)

See Prescription No. 13, *page* 176.

SKIN DISEASE.

There are several forms of skin disease, such as itch, ringworm, mange, eczema, etc., etc., and it is hard for an inexperienced person to distinguish one from another.

The treatment consists in giving Cow Tonic internally; washing all the affected parts with a warm solution of Germ Killer, and applying the Skin Ointment, thoroughly rubbed in. Continue this until the skin heals and all signs of itching or irritation have passed away.

See Prescription No. 60, *page* 176.

SLOBBERING.

Slobbering is not a disease, but an ailment which is due to several causes, such as an inflamed condition of the tongue, ragged edges of the teeth, or an overloaded stomach.

Treatment.

If due to ragged edges of teeth, they should be filed. If due to swollen condition of the tongue, give Fever Paste. If due to an overloaded stomach, give Laxotonic.

See Prescription No. 61, *page* 176.

SORE MOUTH.

This may be due to several causes, such as sharp teeth and inflammation of the tongue.

Treatment.

Dress the teeth and wash out the mouth thoroughly with a solution of Antisepto, and give small and often repeated doses of Fever Paste.

See Prescription No. 62, page 176.

SORE THROAT.

May be due to taking cold or infection, such as catarrhal fever.

Treatment.

Give Fever Paste internally and apply the White Liniment to the throat externally from ear to ear. The bowels should be kept open with Laxotonic and warm water injections (per rectum), and soft and nutritious feed should be fed. Apply Antiseptic Poultice to throat if needed.

See Prescription No. 63, page 176.

SPRAINS.

Sprains are brought on by violent injuries and usually affect the tendons, joints and muscles. The treatment is to wash the parts off thoroughly with a warm solution of Germ Killer and apply Antiseptic Poultice, continuing this until all fever and swelling have disappeared. If the lameness remains, the parts should be blistered with Lucky Four Blister, applied according to directions.

See Prescription No. 64, page 176.

SUNSTROKE OR OVERHEATED.

This is usually brought on by over-exertion, such as too fast driving, etc., etc. The treatment consists in sponging the animal with cold water. Keep in the shade where the air is fresh and pure. Give Fever Paste and 4 ounces of whiskey every 3 hours to reduce the temperature, and small sips of water at short intervals. Give linseed tea to drink, if animal will drink. Do not drench.

See Prescription No. 65, page 176.

SUPPRESSION OF MILK.

This is not a disease, but a condition which is of greater frequence in cold weather than in warm weather, and is often due to some derangement of the system. The treatment consists in giving Cow Tonic according to directions until the natural flow of milk is brought back.

See Prescription No. 66, page 176.

SURGICAL OPERATIONS.

All surgical operations should be performed in a careful and cleanly manner. Knives and instruments should be thoroughly cleansed and dipped into a strong solution of Germ Killer, and the seat of the operation should be thoroughly washed with the same solution. Then apply Healing Oil to the hands, instruments and the parts to be operated upon, and the results will always be favorable.

See Prescription No. 67, page 176.

TEAT STOPPAGE OR STRICTURE.

This is a very common, annoying and complicated ailment. There are two forms of stricture or stoppage; one at the point of the teat, and one at the base of the teat. In either case the treatment is to wash the teats off thoroughly with a solution of Germ Killer. Teat Plug (see illustration, page 172) should also be washed in the

same solution. If the stoppage be at the point of the teat, dip the Teat Plug into the Badger Balm and pass it into the teat far enough to cause the little bulb to enter the teat. When this is done the plug will be retained and should be allowed to remain from one milking to another, and the treatment continued until milking becomes perfectly natural and easy.

If the stricture be higher or at the base of the teat, a Teat Expander (see illustration) must be passed up through the stricture. After it is in position, the center part of the expander must be pressed upon. This will spread the upper part of the expander sufficiently to expand the stricture. However, this instrument should not be allowed to remain more than from one-half hour to an hour at a treatment. A Teat-Bistoury may be used in the same manner. Badger Balm should be applied to the instrument before inserting. The hands of the operator and whole udder of the cow should be thoroughly washed before the operation is begun. Cleanliness must be given strict attention in these cases or the results will not be favorable.

See Prescription No. 68, page 176.

TEAT SORE.

This common form of sore teats may be treated by applying Badger Balm. This should be done after milking, leaving the teats in a nice, clean condition so as to heal between milkings.

See Prescription No. 69, page 177.

TEAT WARTS.

Teat Warts are small growths which adhere to teats in small or large numbers. Treatment consists in touching the little warts with Wartine, according to directions. This should be done while cow is dry.

See Prescription No. 70, page 177.

Dr. David Roberts Giving a Tuberculosis Demonstration at His Veterinary Hospital, Waukesha, Wis.

TUBERCULOSIS

Tuberculosis or Consumption in cattle is an infectious and communicable disease known by the formation in the glands and other parts of the body of small bunches called tubercles. It is from these tubercles that the disease receives its name, Tuberculosis. The germs of tuberculosis enter the body by way of the nostrils in the air breathed, or by way of the mouth or digestive tract in feed, seldom through the genital organs by conception. As soon as the germs enter the body they begin to multiply, slowly but surely, until the entire body of the animal becomes affected. Such animals spread the disease to other animals stabled with them, and calves or pigs, consuming milk from a tuberculous cow, are liable to become affected, as are human beings.

All germ diseases, and especially tuberculosis, are more liable to affect animals that are in a run-down condition, such as cows afflicted with infectious abortion or retained afterbirth, than those that are in a strong, healthy condition, for the reason that the animal that lacks vitality acts as a hot-bed for the germs of diseases to propagate or multiply in, while the healthy, strong. vigorous animal may ward off the disease to some extent.

How to Prevent Tuberculosis.

Tuberculosis, being largely an indoor disease, due to artificial life, such as being housed or stabled, every possible precaution should be taken for its prevention and spread. One tubercular cow, confined in a close, foul, hot, badly ventilated stable, is liable to infect all the other cattle in the same enclosure. Even in the best of barns where there exists any weakening disease among cattle, such as infectious abortion, contagious mammitis, dysentery, or retained afterbirth, there is danger of these affections inviting the entrance and spread of tuberculosis and consequent destruction of the herd. To prevent and guard against this disease, the maintenance of absolute cleanliness is necessary.

Thoroughly Disinfect All Stables.

Admit plenty of sunlight into your stock-barn, for it is the foe of germs. Then you must have good ventilation to carry off the foul gases and allow fresh air to enter. Sunshine, cleanliness, fresh air, pure water and appropriate feed are essential to success in the live-stock business. See page 91 regarding stock-barn.

Detecting the Presence of Tuberculosis.

By means of the tuberculin test it is an easy matter to tell whether tuberculosis is present in a herd. It is the most reliable method of detecting tuberculosis, even in its early stages. All herds should be tuberculin tested. Every animal in every herd of cattle should be tested, as tuberculosis affects a herd to such an extent as to render it unprofitable, although it may be the picture of health.

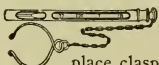
The owner can easily and safely apply the test himself after receiving proper instructions, instruments and a reliable tuberculin, which is a very important part of the test. The test should be applied to a herd, and if any diseased animals are found, they should be removed. The balance of the herd should be tested again in two months. Repeat the test every two months, removing after each test all infected cattle until all tuberculous animals are wiped out of the herd. The remainder of the herd should then be tested every six months, or at least once a year, to be on the safe side. At the same time, all cattle affected with contagious abortion or other diseases should be treated until perfectly well, as they are in condition to attract tuberculosis.

In conducting the tuberculin test, each animal in the herd should be marked by a number tag; or the number may be clipped into the hair on right hip, and the number on the tag should correspond with the number on the tuberculin test sheet, showing a record of the test of each animal in the herd. Test each new animal before it is allowed to mix with the herd. If you make the test at once, you will save all cows that are not affected; if you put the test off, the cows which you could save now will sooner or later become diseased and a loss to you. Learn to make the test yourself so that you may apply it every six months, or at least once a year.

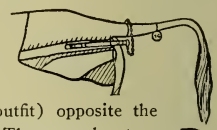
Stock owners should urge their neighbors to test their cattle at least once a year so as to keep the community free from tuberculosis.

How to Apply the Test.

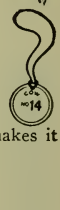
Before commencing the test, each animal should be tied up in the stable for at least three hours. Do not test a sick animal, or one in heat or otherwise greatly excited, twenty-four hours before or after calving, or one just having aborted or retained her afterbirth. Avoid testing in extra hot weather. Make no sudden changes of food at any time of test and do not give cold water just before taking temperature. Do the work as gently and quietly as possible to prevent unduly exciting the cattle.



This Thermometer is to be inserted in the rectum of the animal to be tested, thus:



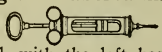
place clasp on tail so the thermometer cannot fall out and break. Leave thermometer in place for three to five minutes, remove and read figures, and then jot them down on test sheet (included in each outfit) opposite the number of the animal to be tested, as shown by the tag. These number tags are supplied free of charge with each outfit. Begin at cow No. 1 and test each animal in turn, taking each temperature in the same way, being careful to shake the mercury down below 100 before inserting the thermometer. This is done by holding the thermometer tightly, then giving it a quick jerk. A little vaseline applied to the rectum of each animal at beginning of test makes it easy to insert the thermometer.



First Temperatures (First Day).

Temperatures should be taken at 3 p. m., 5 p. m. and 7 p. m.
Tuberculin should be injected after the 7 o'clock temperature.

Injecting the Tuberculin.

Fill this Hypodermic Syringe  with Tuberculin.

Pick up the skin of the animal, with the left hand directly back of shoulder blade in this manner:

and with a quick, short jab with the syringe insert the needle into the skin. Then press in piston to first notch on piston, this being half dram—2 C C, or one dose for a full grown animal. The entire herd should be watered and returned to their places.

Next Temperatures (Second Day).

Temperatures should be taken 10 hours after injection of Tuberculin and following every two hours. These are the hours: 6 a. m., 8 a. m., 10 a. m., 12 m. and 2 p. m.

See Prescription No. 71, for Testing Cattle for Tuberculosis, page 177.

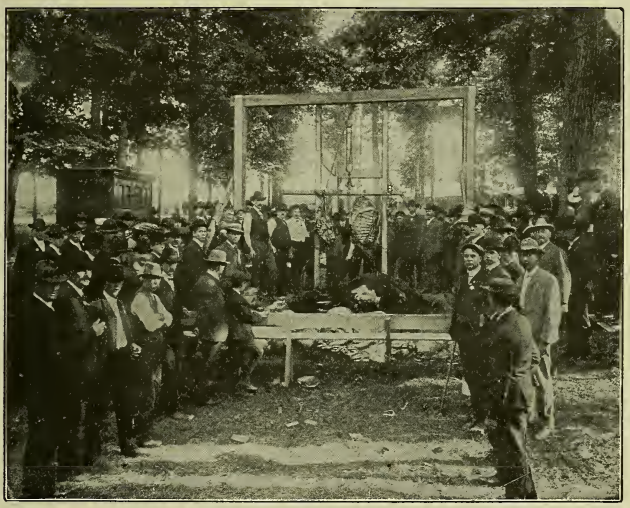
Special Notice.

Cattle suspected of being in the last stages of tuberculosis, or that have been tampered with to prevent reaction, or that have been tuberculin tested inside of sixty days, should have from 3 C C to 4 C C of tuberculin injected into them, and begin taking temperatures six hours after injection, and every two hours thereafter until seven temperatures have been taken.

Disinfecting Stables.

All barns, stables, sheds, or buildings, where tubercular cattle have been housed, should be thoroughly swept, brushed and cleaned; all loose or unsanitary mangers should be removed, and the entire stable thoroughly disinfected by using a double strength solution of Disinfectall. The mangers, stanchions, gutters, walls, and partitions should be especially saturated with this solution, and all water used in preparing whitewash should contain Disinfectall as per directions.

The ceiling, as well as the walls, should be whitewashed, and a liberal amount of the whitewash may be permitted to fall upon the floor, mangers, and gutters, as this has a tendency to purify and sweeten the stable.



AUTOPSY OF TUBERCULAR COWS AT WISCONSIN STATE FAIR.
A—Shows Healthy Lung. B—Shows Diseased Lung.

TUMORS.

As tumors come under the head of operations, it is needless to say that in their treatment absolute cleanliness, both of hands and instruments, is essential. The parts should be thoroughly washed with a solution of Germ Killer, and this followed with applications of Healing Oil. To heal the wound use alternately Absorbent and Healing Lotion.

See Prescription No. 72, page 177.

TICKS.

Cattle Ticks are small parasites which attach themselves to the skin of cattle, and they are frequently the means of spreading Texas Fever, which is a fatal disease unless the Ticks can be destroyed before the last stages of it are reached.

Treatment.

The treatment consists in washing the whole animal thoroughly with a warm solution of Germ Killer; then applying to all parts of the body and thoroughly rubbing in Skin Ointment. All affected and exposed animals should be treated in this manner until all danger is past. Give Cow Tonic internally to tone up the system.

See Prescription No. 73, page 177.

ULCERS.

An ulcer is an open sore on an external or internal surface of the body. Ulcers are caused by inflammation combined with poor reaction on the part of the tissue affected. Local injuries are the immediate exciting cause of external ulcers. Internal ulcers, such as those of the mouth, stomach and intestines, are caused either by injury by foreign bodies, such as a kick, or by micro-organisms and decomposed secretions or other contents.

While the tendency of ulcers is to get well spontaneously, nature is best assisted by cleanliness of the parts by washing them thoroughly with a warm solution of Germ Killer and applying Absorbent to all affected parts, alternating with Healing Lotion. For ulcers of the mouth apply Healing Oil and give Fever Paste.

See Prescription No. 74, page 177.

URINE RETAINED.

Retention of the Urine is usually brought on by any form of paralysis of the hind parts, such as occurs in Milk Fever. The treatment consists in passing a Catheter, which is a silver-plated tube about a foot in length and a quarter of an inch thick, into the bladder. This will allow the urine to flow freely. This instrument should be thus used in all cases of paralysis of the hind parts, as there is usually a retention of the urine.

See Prescription No. 75, page 177.

VOMITING.

Symptoms.

In the first place there is a loss of appetite, and the animal only takes part of its feed. Later on it fails to eat at all, and finally vomits what it has eaten. In other cases, the animal may be in a poor condition, and perhaps has been given food sparingly, then allowed to eat an over amount. In this case it is liable to eject or vomit from five to ten pounds; and will then oftentimes go on eating as though nothing had occurred. In either case, vomiting is due to indigestion, and the treatment consists in giving Cow Tonic to overcome indigestion, and to tone up the system. The bowels, which contain a lot of undigestible material, should be toned up and emptied by giving Laxotonic (per mouth), and from two to four quarts of warm water (per rectum). The animal should be given bran mashes made from linseed tea. To prevent the whole herd from becoming thus afflicted, mix Stokvigor with salt and place in sheltered trough where the cattle can have free access to same.

See Prescription No. 76, page 177.

WARTS

Are little tumors, and often appear very suddenly and are liable to appear at any part of the body or limbs, angles of the mouth, corners of the eyes or tips of the ears. For this reason they are difficult things to remove, and great care should be taken in removing them. The only safe and reliable method is to apply Wartine, once daily, to warts of all kinds until they disappear. The large warts should be pulled out by the roots with the fingers or forceps; then apply the Wartine and Healing Lotion alternately to the wound thus made.

See Prescription No. 77, page 177.

WOUNDS.

There are many different kinds of wounds, some being due to external injuries, others the result of an improper condition of the blood.

Wounds of every nature, both surface and deep-seated, should be washed with a solution of Germ Killer.

Use both Absorbent and Healing Lotion, alternately. Apply and inject same in the following deep-seated wounds, and into abscesses and fluid sacks, after they have been opened; capped knees; blood blisters (or bruises); fistulas, lump jaw, abscesses, or abscesses of the udder; punctured or lacerated wounds, such as are often caused by barb-wire, tin, glass, nails or slivers; sore feet due to cracking, and formation of ulcers between the claws; wounds left after removing large warts.

It is difficult and important in all deep-seated wounds to keep proud flesh from forming, and to cause the wounds to heal nicely without a scar. This can be done if the above directions are carefully and closely followed.

GERM KILLER cleanses the wound.
ABSORBENT prevents proud flesh.
HEALING OIL soothes and heals.

Use Healing Oil for superficial or surface wounds such as cracked or inflamed skin; bruises or irritated skin, such as is often noticed on the knees, ankles, hocks. and hips, from lying on cement floors; cracked or sore teats; sore mouth, both around the mouth and inside; bites of insects; poisoned or inflamed condition of the skin, and all superficial irritations of the skin.

Healing Oil should be used freely on the instruments and hands of the operator. It should also be applied to the scrotum of all live stock castrated, such as calves, colts, lambs and pigs.

Healing Oil is invaluable to the veterinarian, or to parties who make a business of castrating stallions, bulls, boars, or rams, as it prevents infection and blood poisoning in all surgical operations.

See Prescription No. 78, page 177.

The raising of live-stock and poultry is of incalculable importance to the country: meat, milk, cream, butter, cheese, eggs, feathers, wool, leather, and numerous by-products swelling the receipts from these sources to overwhelming figures.

The annual receipts from the cattle industry alone in the single state of Wisconsin equal the total annual gold production of the U. S., $92,000,000.00; and this does not take into account the great value of cattle in fertilizing the soil.

DR. DAVID ROBERTS' STOCK BARN, WAUKESHA, WIS.
Size 36 ft. by 115 ft., with feed rooms and silos attached 147 ft. long.

INTERIOR DR. DAVID ROBERTS' STOCK BARN, WAUKESHA, WIS.
Capacity 60 head of cattle. Stanchions for 44 cows, 3 bull stalls and remainder calf pens.

DESCRIPTION OF A MODEL DAIRY BARN.

The reader has doubtless observed, when riding through the country, groups of buildings which look more like a small village than a properly arranged plan of farm buildings in which to house cattle, sheep, pigs, and poultry, and to store farm products and machinery. Has it ever occurred to you to question whether the arrangement and equipment of these buildings have proven satisfactory to the owner, in a measure proportionate to their cost?

It is safe to say that ninety per cent of the owners of such buildings would change their plans, owing to the fact that they had experienced inconveniences, necessitating many unnecessary steps in the course of their daily duties in caring for the live stock on the farm.

Perhaps the first improvement suggesting itself to the mind of the live stock owner would be to convert a number of small unhandy buildings into one large, well-ventilated barn, insuring greater economy in construction and operation. The second thought would be the elimination of the foul, dark, dingy, disease-breeding basement, by providing an abundance of sunlight through numerous windows, and ample ventilation and good drainage.

Light and ventilation are as essential to the health of farm animals as they are to human beings. Every farmer should make such changes in his old buildings as will provide these necessities in abundance. By studying the detailed description of barn construction in this book, valuable suggestions along these lines may be obtained for the purpose.

While the writer was a boy on the farm, it was generally thought by the people in that locality that the barns were quite modern and up-to-date; but with the passing years improvements have been made in every line, and the plans of barns have also been greatly improved upon.

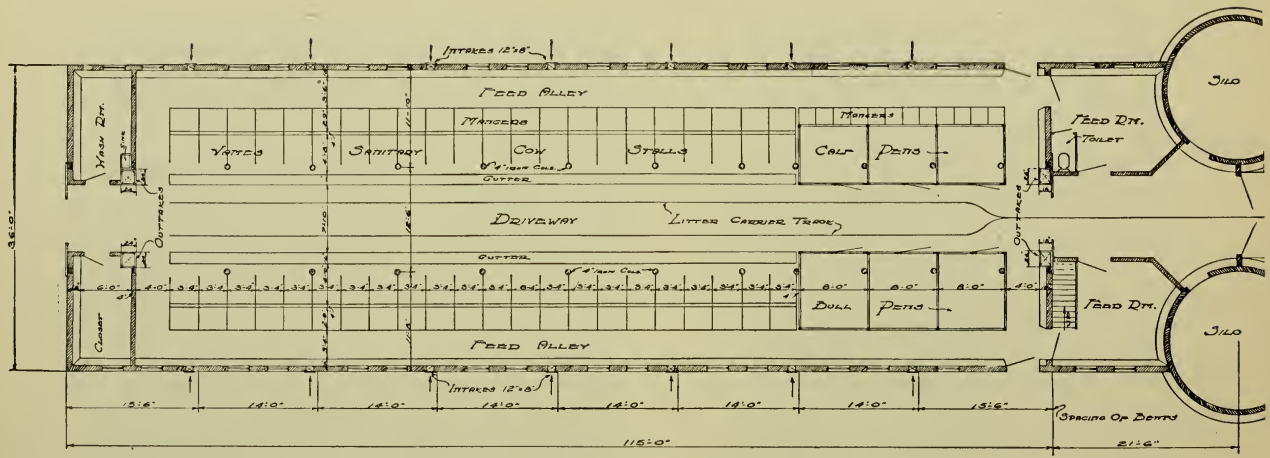
Having conducted a veterinary practice in Waukesha County for more than twenty years, and having visited many parts of the United States, the writer has had exceptional opportunities for observing the most practical methods of planning and building barns.

During the year 1911 the writer purchased a tract of land located on the interurban line between Waukesha and Milwaukee. This farm contained a number of farm buildings which were located on the north side of the place. The location of the electric line on the south side offered an inducement to shift the old buildings, but instead of moving these to a new location, they were left where they were and a space of land was measured off for new structures, which consisted of a dairy barn, a combined milk house and office, and a horse barn.

After plans and specifications had been carefully prepared, showing in detail the size, shape and cost of a new dairy barn, the first step taken was to drive a 180-foot well down into the rock, insuring a bountiful supply of pure, cold water. A convenient well is a great advantage in the erection of new farm buildings, for it saves hauling water during the course of their construction, and it will be conveniently useful for years in supplying live stock on the farm.

As the plans of the dairy barn provided for a wall of hard heads or granite boulders, the next move was to gather as many of these as possible on the farm. This is an excellent way of disposing of surplus stone.

Before the walls of the barn were laid, all necessary drains from milk house, wash room, cattle mangers, and gutters were put in place. One drain or sewer is connected with the conductor pipes to carry off the water from the roof of the barn, and also connected with the cow mangers to carry off clean surplus



Ground Floor Plan—Dr. David Roberts' Stock Barn, Waukesha, Wis.

Height of first floor, 9 feet.

Lighted with 34 windows, double glazed, making them frost proof. Windows are hinged at bottom to allow them to tip inward and are held at top by two 8-inch chains.

Fresh air is taken in through 14 registers that are placed just above stone wall on outside of building. The air passes upward and enters 4 feet higher through 14 adjustable registers near ceiling, distributing fresh air in front of the cattle.

Foul air is taken from floor at both ends of barn by 4 chutes, size 18 by 24 inches each, and running directly out through roof, and capped with galvanized ventilators. The chutes are built of double matched flooring with building paper in between, making them frost proof.

Barn is lighted by individual electric lighting plant.

Floors underneath cattle built of Cork Brick; all other floors cement.

Mangers of galvanized iron with cement bottoms connected with water system, making it convenient for watering stock while stabled.

All gutters and mangers are connected with sewers.

Bull pens as well as calf pens are provided with stanchions.

Bull pens are equipped with metal spring mangers.

Driveway extends through entire length of barn, making it possible to remove litter by team if desired.

Barn is also equipped with a double over-head track and litter carrier.

The water supply is from a well drilled into the rock and is located inside of milk house, and is equipped with a force pump and water system which forces water to all parts of the buildings.

water, and is run to a paddock which is far enough from the barn to be used as a pig pasture. The water runs into a shallow drinking trough and in this manner the pigs are regularly watered without extra effort. The overflow runs into a wallowing vat, which is occasionally sprinkled with a disinfectant, thus keeping the animals free from parasites and insects, such as lice and flies.

A second drain is connected to the wash room, milk room, and gutters back of the cows, and carried to a low place suitable for sewerage, where it can be dried and purified by the rays of the sun, which is nature's germ destroyer. This drain is used for wash water from the stable floors and gutters when scrubbed out. The urine in these gutters is absorbed and used for fertilizing, and is not allowed to escape into the sewer. If preferred it may be run into a urine cistern and later used for fertilizing purposes.

The water pipes from the milk house to the cow barn, as well as the sewers, are placed deep enough into the ground to avoid freezing, so that water can flow from the milk house to the cattle mangers at all seasons of the year.

The milk house measures about 20 ft. by 25 ft., with a partition in the center; one half of this building is used as an office, and has a hard wood floor; the other half for a milk room with a cement floor and a cement water tank so situated as to have the well at one end of the tank. The milk room is equipped with a two horse power gasoline engine, a thirty candle power electric light dynamo, a switch-board and a cream separator.

The gasoline engine is connected to a shaft so that it can be used for pumping water, lighting the barn, and separating the cream at the same time, so that these three operations are performed at the approximate cost of one.

The cement tank is so arranged as to support an air tank for forcing water to all parts of the buildings, and also to cool the milk cans immediately after milking. In this manner the cold water cools the milk, and the warm milk warms the cold water, and after the milk is cooled the water can be let into the cow mangers for the cows to drink. In this manner each milking animal is enabled to warm her own drinking water, which otherwise would necessitate artificial heat, at considerable expense and trouble, twice daily during the winter months.

The milk house contains a small hot water heater connected with the air tank or water system, and also with a radiator in the office for heating same. From this heater hot water can be obtained at all hours of the day or night for washing cans, preparing hot mashes for the stock, etc.

Now as to the plans of the barn itself. More thought and consideration should be given the plans of a barn than is usually given by the owner. Perhaps the first thing to consider is the expense incurred in building a barn. The owner should first make up his mind as to the amount of money he wishes to invest in a dairy barn, so that the plans may be drawn accordingly. The plans should provide for the convenient accommodation of a certain number of cows, calves, and the herd bull, arranged in two rows, extending the entire length of the barn, the larger part of each row being assigned to cows and heifers in stanchions, with the balance of the space designed for bull pens and calf stalls.

In this barn the cattle face out; the calf pens and bull stalls come right in line with the single stalls so as to leave a driveway through the entire length of the barn. In this manner the litter can be removed from the gutters or box stalls by litter carrier or team. The feed for cattle can be carried on feed trucks and distributed from the side aisles which run in front of the cattle on either side of the barn.

With the cattle facing out, it is important to have the fresh air enter the stable near the ceiling and just in front of them, while the foul air is taken from the stable by four large, well built, wooden ventilators, two at either end, and close to the center driveway, built of two thicknesses of dressed and matched boards with paper between, in order to keep these air chutes as near the temperature of the barn as possible. If filled with frost or ice the foul air will not escape as readily. These run through the roof of the barn and a little above the ridge, and have no bends or curves in them, because every bend and curve lessens the capacity of the ventilator.

It is very important to figure the exact amount of ventilation required for a certain size stable, and it is an advantage to have surplus ventilation. For example: This barn requires ventilation to the amount of fifty thousand pounds of live stock, and is so constructed as to give a surplus, which is considered an advantage, as it is much easier to close the incoming and outgoing air chutes than it would be to open doors and windows to help out deficient ventilation.

If however, it is desired to face the cattle in, it is important to bring fresh air from the outside of the building, between the floor and ceiling, and have it empty just in front and above the cattle. The foul air should be taken out through four well built ventilators, one located at each corner of the barn.

Where the driveway is in the center, as in this building, it is important to arrange so that its surface is a very few inches above the level of the ground, and the gutters on either side of this driveway should be four inches deep next to it, and ten inches deep next to the cattle.

The platform on which the cattle stand measures in length 4 ft. 8 in. on one side of the barn, and 4 ft. 10 in. on the other, and the bottom of the manger is 2 inches higher than the floor on which the cattle stand. The feed alley in front of the cows is 6 inches higher than the bottom of the manger, or 14 inches higher than the middle driveway.

The entire floors, mangers and feed alleys are of cement, with the exception of the stall floors, which are of cork brick. This makes it practical to water all cattle in the stable without danger of rotting the mangers. By having the feed alley higher than the mangers, all leaves, or seed from hay. or roughage, can be swept into the mangers, but before watering the cattle the mangers should be swept out. In this way the entire barn is swept at least twice daily.

CAUTION: Be sure that all cement floors traveled by the live stock have a rough surface, so as to prevent animals from slipping.

The stone wall which comes up 3 ft. above the feed alley is built of hard heads and cemented smoothly on the inside, and is so constructed on the top surface as to support the entire weight of the barn.

There are boxed between the studding of the barn, at intervals of about 15 ft., fresh air ventilators, with registers at the bottom on the outside to serve as intakes, and at the top on the inside. These ventilators can be opened or closed according to weather conditions. The windows are double glazed, hinged at the bottom, and permitted to swing in at the top, being held by two short-non-rustible chains, to prevent them from tipping in too far.

The ceiling of the first floor is sheeted, which adds greatly to the appearance and warmth of the basement and also prevents dust and cobwebs from accumulating between the rafters. The hayloft floor is of matched fencing, so as to prevent dust and dirt from sifting through. The frame of the barn can be built in different styles, but the writer favors plank construction, or what is

known as balloon frame, and this barn is so constructed, leaving a large, roomy hayloft, lighted by two large windows on either side by day, and electric lights by night. There are large rolling doors at one end, where hay and roughage can be taken in. This portion of the barn is equipped with a hay carrier and fork, making it easy to fill the barn through the end doors. This does away with what is commonly known as the barn floor driveway, which is an advantage in some people's estimation, and looks like a disadvantage to others.

The walls of the second floor are composed of shiplap lumber and the roof is covered with high grade cedar shingles.

Connected with this barn are two silos, measuring 16 ft. by 35 ft., thus making it possible to preserve ensilage for both summer and winter feeding. These silos are built of brick with a thick coating of cement on the inside, and covered with a shingle roof. The silos are placed far enough from the main barn so as to leave space for feed rooms, both on first and second floors, which connect these silos with the barn. This is found to be an advantage, and also adds to the appearance of the barn.

The barn is equipped with galvanized eave troughs and conductors, to carry the rain water into the drains, which arrangement prevents the water from soaking into the ground around it, as this is liable to cause a muddy condition when stock are permitted to walk through it.

The writer is a firm believer in the protection of buildings from electrical storms by having them properly rodded with the only known protection, namely, lightning rods. There is a vast difference in the manner of rodding buildings, and for the benefit of those interested he will say, not only is this barn itself well rodded, but also the silos. Branch wires connect all hay carriers, litter carriers and silo door frames of iron or steel; in fact, anything that is of a conducting nature is connected with lightning rods, so that if struck by lightning, the electric current can be conveyed to the ground.

Perhaps the most important part of the entire barn to consider is the first floor furnishings. Too much thought and careful consideration cannot be given to the selection and installing of equipments, which should consist of either galvanized piping, or metal painted pipes, so constructed as to form a partition between the animals. By this method of stabling the danger of cows stepping on one another's teats and udders can be avoided.

Swing stanchions have been installed, so that a cow can swing her head around and lick herself at her comfort and ease. The mangers are equipped with steel partitions, so that in feeding, cattle will not consume more than the amount intended for them, and this will also prevent them from reaching the next cow's feed. In doing this they are very apt to slip and fall on their knees, causing what is commonly known as big knees in cattle.

The metal mangers are weighted so as to swing upward, permitting the attendants to sweep out more conveniently before watering the cattle.

The bull stalls are built of 1¼ in. painted iron pipes, equipped with stanchion, feed box, and watering bowl. These stalls drain to the gutters that extend back of the cows.

The calf pens are so constructed as to accommodate about four calves in each. Each pen is equipped with a set of small stanchions and partitioned mangers, so that when feeding, calves can be tied in these and left for at least one half hour after they are through drinking milk, which prevents them from sucking one anothers ears, etc. This also enables the calf to get the amount of grain or

milk intended for it, instead of being crowded by a larger calf, which is liable to get more than its share. One condition is just as bad as the other, namely, overfeeding or underfeeding.

All stalls have an iron bracket just over the stanchion of each animal, where the name and number of every animal, printed on a cardboard, is slipped into an opening at the end of such a device. In this manner the attendant soon becomes familiar with the name and number of each animal. Every animal has an ear tag number, which number appears on the cardboard above mentioned.

BOOK-KEEPING ON THE FARM.

It is very essential to success that all live stock owners and farmers keep an accurate book account of all income and expenditures on the farm. but as time rolls on these detailed duties sometimes become burdensome and are apt to be neglected.

Right here the writer wishes to offer a suggestion, gathered from actual experienec in conducting his own farm. Open a bank account with a sound and well established bank and deposit every dollar received from the farm with the bank. Pay all your bills and expenses by check on the bank, and at the close of the year you will have an accurate book account of every dollar received and every dollar paid out. From this record you can readily see the exact source of your income, and also see how much was paid out for improvements, and how much for the several items of expense. This will give you intelligent information as to what items of expense are too large, and where economy should be practised.

Another great advantage in paying bills by check is, that you always have the record before you and you run no danger of paying bills twice.

All of this book-keeping is done by your bank without any expense to you, and it puts the farm on a good business basis and enables you to determine your exact yearly income and expenses.

Should you as a farmer or live stock owner, desire to borrow money, you can usually do it to the best advantage from the bank where you keep your account. They will advise you as to the rate of interest they charge, and will keep you posted as to when the interest and principal falls due. This, also, saves you a certain amount of book-keeping.

Also should you have surplus funds, which you desire to loan, it is always best to consult your banker as he is well posted and will be glad to advise you as to what investments you should make. Surplus funds can be deposited with the bank and draw interest until a more permanent investment can be made.

To make a long story short, make your banker your book-keeper and financial advisor.

It would be more profitable to borrow money from your banker at 10 per cent to buy a pure bred sire to be placed at the head of your herd than to use a mongrel or grade bull at any price.

Remember that high-grade, well-marked heifer calves will bring considerably more money than will calves without any indication of good breeding. For this reason your additional profits in one season will pay for a good, pure-bred sire.

KING HENGERVELD PONDYKE NO. 47843.

At head of Holstein Herd owned by Dr. David Roberts, Waukesha, Wis.

His sons out of our large weekly and yearly record cows make splendid herd headers.

His sire is ¾ brother to	Butter		Butter
Pontiac Clothilde DeKol 2d (7 day)..	37.21	Pontiac Pet (World's weekly record).	37.68
Semi-official 1 yr. (World's record)..1271.60		Pontiac Rag Apple, 4½ yr. (7 day)..	31.62

FEARLESS LASSIE NO. 88352.

Official Seven Day Record—Butter 24.306 lbs.
Owned by Dr. David Roberts, Waukesha, Wis.

COUNTY BREEDERS' ASSOCIATIONS.

For the advancement and improvement of live stock breeding, county associations will be found exceedingly beneficial. In 1905 the writer had the pleasure of having all breeders interested in the breeding of pure bred Guernseys meet with him at his office at Waukesha, Wis., and organized what is now known as the Waukesha County Guernsey Breeders' Association, which at the present time has about eighty members, who own fully 1,600 head of pure bred Guernsey cattle. The members of this Association are satisfied that through this organization there have been created an interest and a demand which have greatly advanced the price of pure bred Guernseys.

The writer later issued invitations to all of those interested in the breeding of pure bred Holstein cattle to meet at his office March 1, 1909, at which time the Waukesha County Holstein-Friesian Breeders' Association was organized. This organization has at the present time a membership of 110, who own about 1,800 head of pure bred Holstein cattle. Each of these Associations has created a demand for good cattle, which naturally has increased their valuation, as well as encouraged new breeders.

Some of the best sires obtainable have been introduced into the herds owned by the members of these Associations, consequently the offspring of these numerous herds are rapidly growing into money. Buyers are attracted here from all parts of this and some foreign countries, which would indicate that Wisconsin is becoming well known as a pure bred state, and Waukesha County has established a reputation for itself as being a great center for pure bred cattle.

Wisconsin has more tuberculin tested cattle than any other state in the United States. Waukesha County has more tuberculin tested cattle than any other county in the state. This is another good reason why live stock owners desiring to purchase tuberculin tested pure bred cattle are attracted to Waukesha.

Other Associations of pure bred dairy cattle have been organized in the state of Wisconsin and are meeting with splendid success. While the Ayrshire breed of cattle are not as prominent in the state of Wisconsin as some of the other breeds, they too are fast becoming a desirable breed to raise.

In regard to selecting a breed of cattle, this must be left entirely to the one who intends to invest his money and spend his time in the care and breeding of them. The market sometimes enables one to decide just what breed of cattle to go into. For instance: if there be a great demand for high testing milk, it is important to go into such a breed of cattle as will produce this quality. On the other hand, if the market calls for a large production of milk and does not require a high percentage of fat, there are breeds of cattle which will produce this commodity. If the market be such as demands a reasonable quantity of ordinary percentage of fat, there are breeds of cattle which will meet these requirements.

It is very important when selecting a breed of cattle to choose the breed which will prove profitable, as when cattle are profitable the owner is inclined to think a great deal more of them, and consequently will give them better care and attention than he would otherwise.

Perhaps the most economical manner in which to go into the pure bred breeding of cattle is to purchase a pure bred sire to be placed at the head of the herd. In this manner the entire herd can be graded up so that at the end of a few years they will look like pure breds, and have a great tendency to be an improvement over their dams. It is also advisable to obtain pure bred females and permit the pure breds to crowd out the grades. In this manner at the end of a few years a pure bred herd will have been established at practically a small expense to the owner.

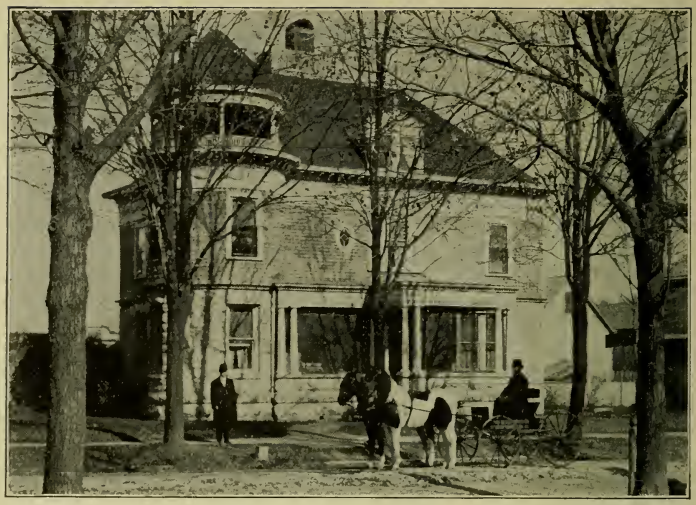
It is not advisable to use a grade sire at the head of any herd, regardless as to whether the calves are intended for raising, or veal, as many farmers will pay more for a nicely marked, high grade heifer calf for breeding purposes than can be obtained if sold for veal.

When selecting a herd sire, it is very important to select one with excellent breeding back of him, and one whose sire and dam are not only well bred, but of splendid dairy conformation, as by so doing, and breeding this animal to a good grade individual, you will obtain heifers which are superior to their dams.

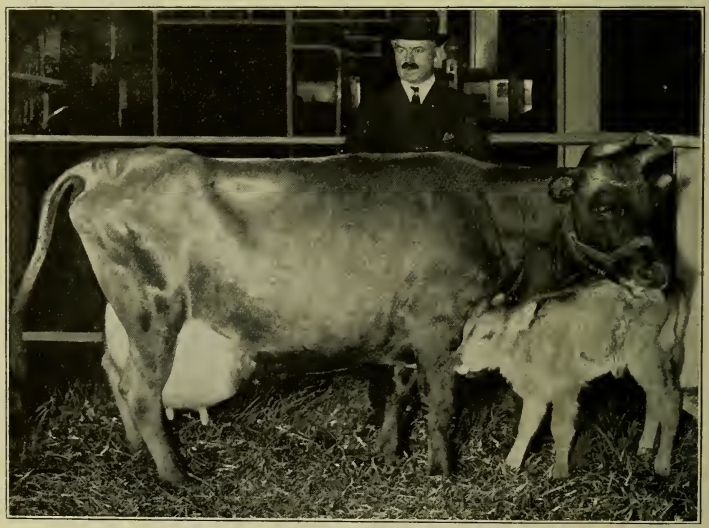
The object of raising pure bred cattle in preference to grades may be looked upon from different standpoints, but it is a fact that pure bred cows should produce more than grade cows, owing to the fact that their ancestors have been bred with this object in view for generations back, while oftentimes grade dairy cows are crossed with the beef breed, thereby naturally diminishing their milk production.

The breeder of pure bred cattle has two crops to market—milk and calves; milk at a market price, and calves at an advanced price, over the grade calf which is usually sold for veal. With this object in view it is natural for the average live stock owner to have an ambition to become a breeder of pure bred cattle, for which although there are a goodly number throughout the United States, there is still a steady increasing demand.

As long as the population of the United States increases there will be an additional demand for the best dairy products, and in order to meet this demand, it behooves the live stock owner to be prepared with a constantly improving herd with which to meet this demand in our greatest national industry.



Dr. David Roberts' Residence, Waukesha, Wis.



JACOBA IRENE AND BULL CALF—THE $10,000 JERSEY.
One of Dr. David Roberts' Patients at the National Dairy Show in 1909

The Horse

History

Breeds of Draft Horses

Symptoms and Treatment of Horse Diseases

How to Give Horses Medicine

HISTORY.

As far back as history goes, we find that the horse was the servant of man. The first mention of the horse is as a domestic animal, and not as a wild animal.

The Arabs are renowned as early breeders of fine horses, and history tells us they considered their horses their companions, being kind in their treatment and holding them high in their affections. Great care and attention were bestowed upon breeding. In this manner they produced a breed of horses noted for its high intelligence, great speed and remarkable endurance. While they were always careful and considerate of their horses, still they expected always that a horse would do its best for them, and that it would endure many hardships. They were the first to establish pedigrees, and the line of breeding in their day was considered as important to them as it is today among high-class breeders. Breeders of horses at the present time are following in their footsteps closely, guarding carefully the pedigrees of their horses, giving them better care and closer attention, and in this way producing a better grade and endeavoring at all times to reach the highest mark possible.

To get the best results out of a horse it is necessary that he be treated with kindness and given the best care and attention.

HORSE'S AGE.

To tell the age of any horse,
Inspect the lower jaw, of course;
The six front teeth the tale will tell,
And every doubt and fear dispel.
Two middle nippers you behold
Before the colt is two weeks old;
Before eight weeks two more will come,
Eight months the corners cut the gum.
The outside grooves will disappear
From middle two in just one year.
In two years from the second pair—
In three years "corners," too, are bare.
At two the middle "nippers" drop;
At three the second pair can't stop;
When four years old the third pair goes,
At five a full new set he shows.
The deep black spots will pass from view
At six years, from the middle two;
The second pair at seven years;
At eight the spot each corner clears.
From middle "nippers" upper jaw
At nine the black spots will withdraw;
The second pair at ten are bright;
Eleven finds the corners light.
As time goes on the horsemen know
The oval teeth three-sided grow;
They longer get—project—before
Till twenty, when we know no more.

Dr. David Roberts.

Percheron Mare.

THE PERCHERON HORSE.

This breed takes its name from the district of LaPerche in France, which is the chief center of horse breeding in that country. The breed originally derived its size and weight from the ancient Black horse breed of Flanders, and its style and quality from sires of the Oriental breeds. In the early days the Percheron breed was used for hack and bus work, and was of suitable type and conformation for that purpose.

More weight and larger bone have been developed by use of the heavy draft stallions of one or other of several breeds of the kind raised in France. Gray or white was the original color of the Percheron breed, but, recently black has become as common, although it is not so surely transmitted as the characteristic grey of the purely bred Percheron.

Until recent years draft horses from France went by various names such as French Draft, Norman, Norman Percheron, and Percheron, but in the year 1883 the Percheron Horse Society of France was organized and the name Percheron adopted for the breed.

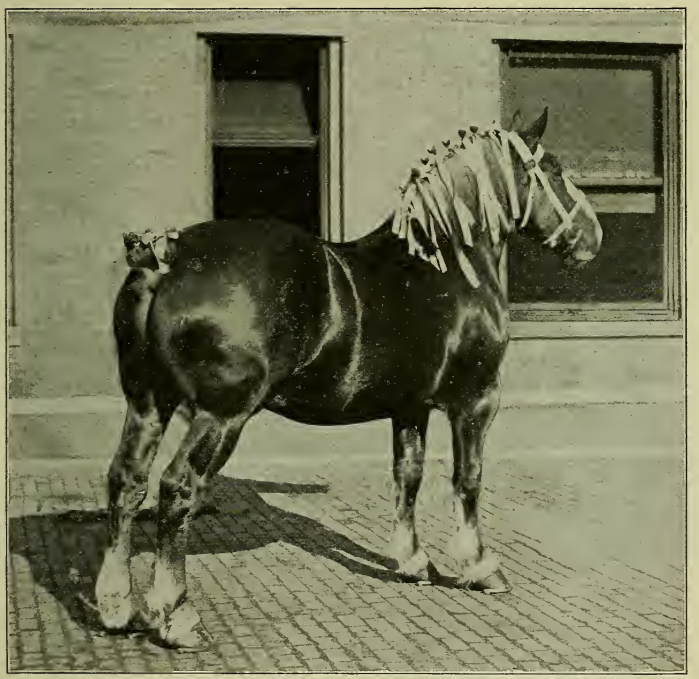
The first volume of the Percheron Norman Stud Book of America was published in 1876, but the name Percheron was finally adopted as a result of similiar action in France.

French draft horses also from France, and practically of the same breed as the Percheron, have a separate stud book, entry to which is based upon rules less stringent than those adopted by the Percheron Association. After prolonged

dispute, matters pertaining to the registry of Percheron horses in America have at last been satisfactorily adjusted.

The up-to-date Percheron stands about sixteen hands high, weighs from 1700 to 2200 pounds. The color is usually white, grey or black. He should have an intelligent head, which is a type peculiar to the breed; rather small ears and eyes; short, strongly muscled neck; strong, well laid shoulders and chest; a plump body; strong back, and heavy quarters.

He usually is low down and blocky on short, clean legs, devoid of long hair, often called feathers, and has well shaped sound hoofs, has splendid action, and travels smoothly.



Belgian Mare

THE BELGIAN HORSE.

The Belgian horse takes its name from the country in which it originated, namely, Belgium. The breeding of these horses constitutes one of the principal sources of wealth of the Belgian farmer, and the government aids and encourages the breeding of these horses. The Belgian Draft Horse Society was founded in Belgium in 1883 and has constantly increased in membership.

There is no standard color for the Belgian breed, but red and blue roans are most popular, while bays and browns also exist.

The typical Belgian horse is blocky, wide, heavy, on short clean legs. His neck is usually short and muscular, in fact he is inclined to be muscular or exceedingly fat at all times, and as a rule these Belgian horses are perhaps more readily and quickly fattened than those of any other breed.

This makes the Belgian grade exceedingly popular with the professional horse breeders, as it requires but a short time to condition them for market.

This breed is rapidly improving along the lines of activity, and owing to the kind, gentle disposition of the Belgian, they are becoming exceedingly popular.

Shire Mare

THE ENGLISH SHIRE HORSE.

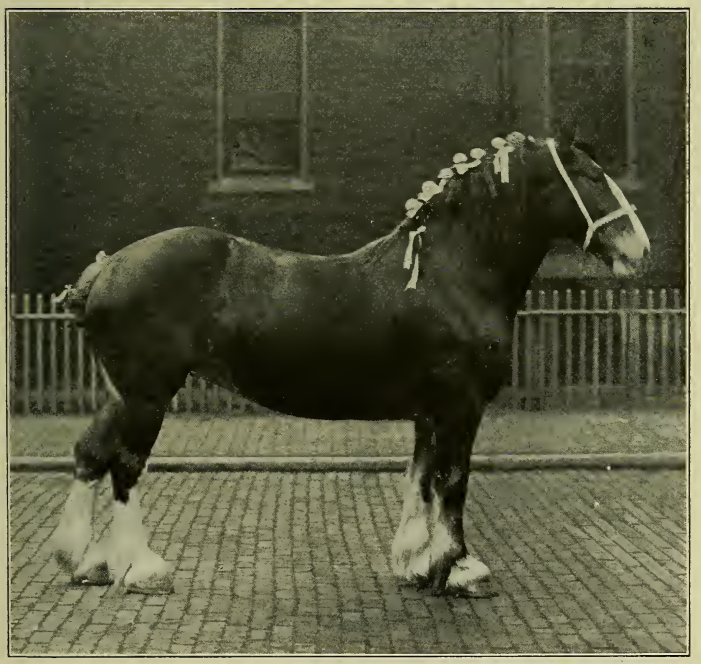
The English Shire horse originated from a cross between the black stallions of England and the native mares. They produced a very heavy, hairy legged draft horse many years ago, and this same animal is still bred pure, and gradually has been improved in many particulars. The black color is no longer a characteristic of the breed. The Shire horses of today are mostly bay or brown, and they are less coarse and sluggish than they formerly were. Perhaps the largest number of pure bred Shire horses are raised in Lincolnshire and Cambridgeshire, England.

The first volume of the Stud Book of the Shire Horse Society of England

was published in 1880 and that of the American Shire Horse Association appeared a few years later.

The Shire horse is of great weight and power. He is more massive than some of the other draft breeds, but lacks somewhat in quality. His body is short, deep, broad, round; the coupling extra strong and close, and the thighs and quarters heavy muscled. While he is immensely powerful, he is slow in motion, and sluggish in dispostion. His coat or hair is somewhat coarse and the legs, while extra heavy in bone, do not present the clean appearance of those of the Clydesdale.

The strong, broad, short back of the Shire is greatly in his favor. The Shire horse usually weighs about a ton and many specimens exceed that weight.



Clydesdale Mare.

THE CLYDESDALE HORSE.

The Clydesdales are the draft breeds of Scotland and they have been bred pure for many generations. They originated in a district in Scotland called Clydesdale, from which they derived their name. Heavy black stallions, as with all other heavy draft breeds, were freely used to found the Clydesdale, and records

show that such horses were employed as early as 1715. Since that date great attention has been paid to the improvement of the breed and the preservation of purity of blood and records of pedigree.

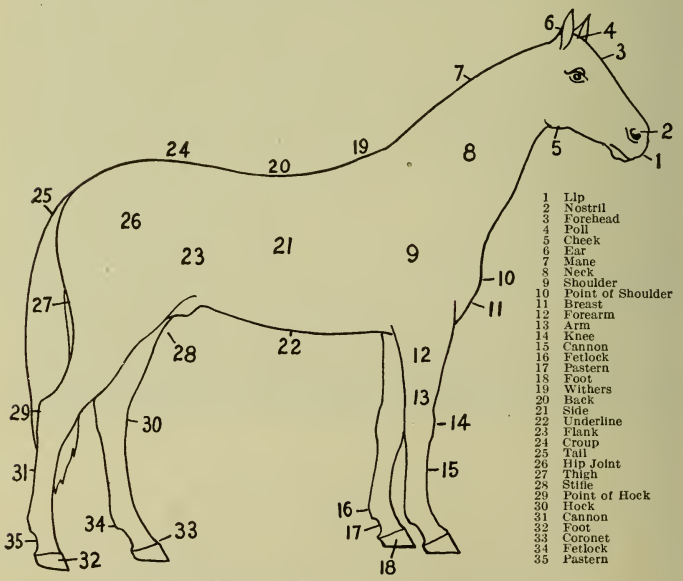
The Clydesdale color has been given much attention so that bay or brown, with white markings, such as white faces and white limbs predominate, while other colors such as grey, chestnut and black are less commonly met with.

So carefully have these horses been mated, and so honestly have all matters pertaining to pedigree been conducted, that the purity of blood of recorded horses of this breed is beyond question, and assures a high pedigree of not only breed prepotency, but a remarkable degree of individuality.

In 1877 the Clydesdale Society of Great Britain was founded and a Stud Book issued. The Clydesdale Society of America also was organized in 1877.

The Clydesdale usually stands sixteen hands high and over, and weighs from 1800 to 2200 pounds. The head usually is of good shape, eyes practically perfect, ears of correct shape and size, neck of fair length, arched and muscular. Body powerful, back fairly good, croup of ideal type and well muscled; thighs and quarters strong and full of muscle; legs free from meatiness and notable for breadth development of tendons; clean dense bone, and quantity of fine, silky hair, oftentimes called feathers, which spring from the rear of the back tendons.

Special attention has for many years been given by breeders to develop quality and action in this breed of horses. They are noted for their fast, elastic, energetic walking and trotting gait, which is a very desirable feature in draft breeds.



When describing blemishes refer to numbers shown on this cut.

Symptoms and Treatment of Horse Diseases

ABORTION IN MARES OR SLINKING OF THE FOAL.

From the third to fifth month of pregnancy there is danger of mares aborting, and to avoid this danger they should receive good, clean, nutritious feed; the stables should be well lighted, well ventilated and well drained, and a good germ destroying disinfectant should be used to overcome and allay all foul odors, which usually indicate that there are germs present.

The system of a mare at this time is in a very delicate condition, and if there be any time during the entire period of pregnancy that she requires a tonic it is at this period. The Breeding Tonic is especially prepared for this purpose and is invaluable for pregnant mares. The genital organs should be washed out with Antisepto Solution.

See Prescription No. 79, page 177.

ABSCESS.

An abscess is a gathering of pus or matter in a sack, and it may develop in any part of the body. The most common location for them to form is between the angles of the lower jaw. This may be due to Distemper, or it may form on the withers, and is then known as Fistula Withers. If on the head, it is then known as Poll Evil.

Abscesses are caused by either impure blood or bruises.

If due to impure blood, this should be overcome by giving Physic Balls and Horse Tonic.

How to Treat Abscesses.

An application of Antiseptic Poultice (see page 135) should be placed upon the seat of an abscess, continuing this treatment until it comes to a head, at which time it should be opened with a sharp, clean, pointed knife, at the lower part of the abscess, making a cut so as to allow all matter to flow out freely. The knife should first be dipped in a solution of Germ Killer and then in Healing Oil to prevent infection. Then make a solution of Germ Killer and wash out the cavity by the use of a syringe.

After the abscess is thoroughly washed out, inject Healing Oil or Healing Lotion.

See Prescription No. 80, page 177.

ASTHMA.

Asthma is similar to Heaves. (See Heaves, page 119.)

See Prescription No. 81, page 177.

AZOTURIA OR PARALYSIS OF THE HIND PARTS.

This is a disease which comes on suddenly and is due to an acid condition of the blood. It sometimes affects the front parts as well as the hind parts, and the animal may come out of the barn feeling fine, ambitious, willing to go, and often goes faster than usual, but before it has gone very far it begins to lose its spirits, hangs back, sweats profusely, breathes hard and begins to knuckle over behind, gets lame in one or both hind limbs, and in a short time it is unable to go any farther and often falls helpless on the road.

Treatment.

Roll the animal on a stone boat and haul to the nearest warm, comfortable stable; place it in a large box stall, never in a single stall. Give one bottle of Colic Drench and follow with Kidney Aid according to directions. Half a bushel of dry, hot salt may be placed upon the kidneys. The body should be kept warm by placing a blanket on. Give four quarts of warm water injection (per rectum) by the use of a Flushing Outfit and the urine should be drawn by means of a catheter. The animal should be turned from side to side as long as it is unable to rise, and it should be kept down by hobbles until it is able to get up and stand alone. This will keep it from injuring itself by floundering.

Give the animal all the water it wants to drink, with the chill taken off, while very little feed, if any, should be given during the first twenty-four to forty-eight hours. The animal should receive light food for several days.

See Prescription No. 82, page 177.

BARRENNESS IN MARES.

Barrenness, sterility or failure to breed in mares is due to imperfect, unnatural, or diseased genital organs. Imperfection of the genital organs may be due to an undeveloped womb or ovaries.

Unnatural Condition of the Organs.

An unnatural, swollen and inflamed condition of the genital organs may be brought on by a retention of the afterbirth, this being allowed to be retained in a decomposed condition until the mouth of the womb becomes irritated, scalded and sore, so that when it closes it heals so firmly that it cannot always be opened without mechanical aid.

Diseased Organs.

The genital organs may become diseased from several causes, the main cause being neglect, when they become affected with a catarrhal discharge. This disease is called Leucorrhœa, or Whites, and if a mare be served while in this condition the semen of the stallion will be destroyed by this corrosive discharge, thus preventing conception.

All Healthy Mares Should Breed.

All reasonably healthy mares should be made to breed. This can be done with little trouble and slight expense if given proper attention. Many a valuable mare has been sacrificed or disposed of for the reason that she would not breed. This may have been due to a lack of proper information pertaining to this subject. It is a very important thing that a mare, in order to conceive, be in a reasonably healthy condition. The genital organs should be in a condition to perform their functional duties as nature would have them. A lack of secretion or an excess of secretion renders conception difficult. A lack of ambition or vigor, or an over amount of same, renders conception difficult. This should be overcome and controlled by the use of the Breeding Tonic, which contains ingredients that will regulate and control the genital organs. A mare should not be too thin (emaciated), thus lacking the strength which nature demands. Neither should she be too fat (plethoric), or over stimulated, for in this condition conception would be difficult.

Favorable Signs for Breeding.

A mare before breeding should be carefully examined to make sure that there is no unnatural discharge from the vulva. An unnatural discharge from the vulva may be a mucus streaked with or containing drops of matter, or pus, having

a disagreeable odor and being of a very sticky nature, adhering to the tail or thighs. This would indicate a diseased condition of the genital organs and should be given prompt attention.

Antisepto Solution Important.

The genital organs of all barren mares should be washed out with this solution until they conceive, whether they have a discharge or not. This solution will overcome the acid secretion which kills the semen of the stallion and prevents the mare from conceiving. It will also prevent and destroy germs, soothe and heal all inflamed mucous membranes, thus preventing the formation of germs and the spread of the disease. If a mare be cared for according to the demands of nature and fails to get with foal, after being bred a reasonable number of times, she should have the mouth of the womb opened. This is done while the mare is in heat by inserting from one to two fingers. This will dilate the neck of the womb and make conception easy.

Treatment of Barrenness.

Barren mares should be given Breeding Tonic in their feed and their genital organs should be washed out with the Antisepto Solution.

As barrenness is either due to a diseased or weakened condition of the genital organs, it is unreasonable to expect a mare to breed until this condition is overcome. The Breeding Tonic contains such ingredients as will tone and strengthen and regulate the genital organs, in this manner putting them in a strong, healthy breeding condition. The neck of the womb can be opened by the fingers, if necessary, after this treatment.

See Prescription No. 83 *for Treatment of Barren Mares, page* 177.

BLOATING.

Bloating is due to indigestion and is caused by feed hard to digest. In order to avoid this trouble, which often proves fatal, see that your horses are digesting their feed. Their teeth should be well dressed.

This bloating is more often called Wind Colic. It usually comes on rather suddenly and continues, if not checked, until the animal's abdomen becomes very much distended, and unless the horse receives a dose of Colic Drench it may be necessary to resort to tapping. This is done on the right side of a horse, and the left side of a cow, and the seat of operation is located a little below the point of hip and the last rib. The instrument used is a trocar and a canula, which is usually a little smaller than a cattle trocar.

Before the operation the parts should be washed with a solution of Germ Killer. Cut a slit one-fourth of an inch long through the skin before attempting to insert the trocar. The instrument should be thoroughly washed with a solution of Germ Killer and dipped in Healing Oil. This will prevent infection. An injection of four quarts of warm water (per rectum) should be given by the use of a Flushing outfit.

See Prescription No. 84, *page* 177.

BLOOD POISONING.

See Blood Poisoning in Cattle, page 63.
See Prescription No. 10, *page* 177.

BOG SPAVIN.

This is a distension of the synovial bersa and is located just in front and to the inside of the hock joint and is usually caused by strains.

The treatment, which is very effectual in colts, consists in washing off the

hock thoroughly with soap and water, allowing it to dry. Clip off the hair and apply the Absorbent according to directions. The animal should rest during the treatment, but good results have followed even when the treatment has been applied and the animal worked.

See Prescription No. 85, *page* 177.

BONE SPAVIN.

Bone Spavin in horses is known by the limp and the enlargement, which is a hard, bony growth on the inner side of the hock joint, usually low down and a little forward of the center of the leg. In traveling there will be a quick hitch with the sound leg and a stiff movement of the lame leg, bearing the weight on the toe, most noticable in starting. The enlargement is due to a growth between the outer edges of the hock joint bones.

Treatment.

The proper way to treat this is to absorb the growth between the edges of the bone by the use of Bone Blister. When this is done the lameness will cease.

See Prescription No. 86, *page* 177.

BROKEN KNEE.

Broken knee means that a horse has fallen on his knees and broken the tissues, oftentimes so extensively as to cause the joint oil to flow.

The treatment consists in washing the parts thoroughly with a solution of Germ Killer. Then apply Healing Oil around the wound to the bruise, and apply Absorbent to the wound itself.

Keep the animal quiet and free from exercise. If the animal has a desire to bite the sore, its head should be tied up.

See Prescription No. 87, *page* 177.

BROKEN WIND.

Broken Wind is similar to Heaves and should be treated in the same manner.

See Prescription No. 88, *page* 177.

BRONCHITIS.

Bronchitis is similar to Pneumonia or Lung Fever and should be treated in the same manner.

See Prescription No. 89, *page* 177.

BRUISES.

Bruises and swellings affecting any part of the body should be treated by thoroughly rubbing in Badger Balm and applying Antiseptic Poultice. This should be repeated and continued until all heat and swelling have disappeared.

See Prescription No. 90, *page* 177.

BRUISES OF THE FROG.

This is usually due to traveling on stony roads, and the treatment consists in applying the Antiseptic Poultice and continuing same until all soreness. heat and lameness have disappeared.

See Prescription No. 91, *page* 177.

BURNS AND SCALDS.

All burns and scalds should be treated by applying Healing Oil or Badger Balm, followed with Antiseptic Poultice.

See Prescription No. 92, *page* 178.

CALK WOUNDS.

A calk wound is usually caused by one horse stepping on another one; and a horse may calk itself.

Treatment.

The hair should be clipped from the injured parts and the parts washed off with a Germ Killer solution; then by the use of the blacksmith's knife all parts of the broken hoof should be trimmed down as closely as possible to give the wound a good drainage and prevent the formation of pus or matter which usually forms there. Lack of drainage will have a tendency to cause the horse to lose its hoof.

Apply Healing Oil around the wound and touch the wound with Absorbent. Then apply Antiseptic Poultice to the entire wound. The animal should receive laxative and soft feed during the treatment.

See Prescription No. 93, page 178.

CAPPED ELBOW OR SHOE BOIL.

This is an enlargement usually due to bruising of the point of the elbow where a collection of liquid gathers in the form of a large sack. If the sack is quite large and very soft it should be opened and thoroughly washed out with a solution of Germ Killer; then inject the Absorbent. If the shoe boil is not ready to open it may be removed by applying the Absorbent.

See Prescription No. 94, page 178.

CAPPED KNEE.

Capped Knee may be treated in the same manner as Capped Hock.

See Prescription No. 95, page 178.

CAPPED HOCK.

This is an enlargement due to bruising of the point of the hock and should always be looked after and treated in its earliest stage. The treatment consists in clipping off the hair, washing off the parts and when dry applying Absorbent. One washing is usually sufficient. If a blister is required, apply the Bone Blister according to directions.

See Prescription No. 95, page 178.

CASTRATION OR CUTTING COLTS.

This is an operation which the owner of horses very seldom undertakes, but in case he should desire to do so, the parts should be thoroughly washed with a solution of Germ Killer and then apply a little Healing Oil. All the instruments used, and the operator's hands, should first be thoroughly washed in a solution of Germ Killer and dipped in Healing Oil to prevent infection.

See Prescription No. 96, page 178.

CATARRHAL FEVER OR PINK EYE.

Catarrhal Fever is similar to Distemper or Strangles, affecting the mucous membrane, especially the air passages, and if neglected often causes Pneumonia and Bronchitis. There is usually a discharge from both nostrils. First it is a thin, watery discharge, but it often becomes thick and matter-like. Again in many instances the horse may have Catarrhal Fever without discharging from the nostrils. There will be a soreness of the throat, inability to swallow, and loss of appetite.

Treatment.

If the temperature does not exceed 103 degrees the animal should be given a Physic Ball. If it should, omit the Physic Ball.

Apply White Liniment to the throat from ear to ear. If there be loud breathing, apply Antiseptic Poultice from ear to ear to allay the inflammation. Give Fever Paste to reduce the temperature (in bad cases add one ounce of good whiskey to each dose of Fever Paste), and give Horse Tonic to keep up the appetite, and warm water injections to loosen up the bowels. Make a solution of Germ Killer or Disinfectall and dip gunny sacks in it and hang them around the stables to destroy the germs.

Allow the animal plenty of cold water to drink, and laxative food, such as bran mashes and grass in season.

See Prescription No. 97, *page* 178.

CHOKING.

This is a stoppage of the food in the swallowing tube or gullet. Usually the obstruction stops just before entering the stomach, and as the animal swallows, each swallow is stopped in the tube until the tube, or gullet, is filled up with saliva and food. It will then begin to come out of the horse's nostrils in a mixture of feed, froth and saliva.

The animal, in its effort to swallow, appears to have a spasm, often squealing in a desparate effort to pass the food down.

Treatment.

Lead the animal down a steep embankment, stopping him at the steepest place, where the hind parts will be very much elevated above the front parts. Then, by pressing the head downward, a great part of the matter will pass out through the nostrils. You are then to lead him back into the stable; back him into a single stall, and by the use of a Drenching Hook draw his head up gently and give him half a dose of Colic Drench, but only give him one swallow at a time and that through the mouth, never through the nostrils. Then turn him loose in a large box stall. He should not be allowed to eat a mouthful of food of any kind. Neither should he be allowed to drink any water.

In an hour lead him again down the embankment, and after so doing give him another dose of Colic Drench. This should be repeated in the manner described every hour until the horse recovers. Feed sparingly after he recovers.

See Prescription No. 98, *page* 178.

COCKED ANKLES.

To prevent and overcome Cocked Ankles, the toe calk should be left off; the heel of the shoe raised with heel calks. Apply White Liniment to the tendons from the hock or knee to the ankle. This should be continued until the proper results are obtained.

See Prescription No. 99, *page* 178.

COLD IN THE HEAD.

A cold in the head may be thought by most attendants to be Distemper, but as the treatment is like that of Distemper, it does not matter.

The treatment consists of applying White Liniment to the throat from ear to ear, giving the Fever Paste to reduce the temperature, and giving the Horse Tonic to keep up the appetite. Warm water injections should be given (per rectum), to empty the bowels.

See Prescription No. 100, *page* 178.

CONSTIPATION.

Constipation in itself is not a serious ailment, but frequently leads on to more dangerous conditions and should be prevented and overcome by the use of a colic drench and four quarts of warm water injections (per rectum) by the use of a flushing outfit. The animal should receive Laxotonic, soft food and regular exercise.

See Prescription No. 102, *page* 178.

CORNS.

Corns are brought on by improper shoeing and bruises of the feet, and the treatment consists in removing the shoe, poulticing the foot with Antiseptic Poultice, trimming out the diseased and bruised tissues and applying Absorbent according to directions.

See Prescription No. 103, *page* 178.

COUGHS.

A Cough is due to an irritation of the throat and is often brought on by taking cold, or coming down with a catarrhal disease, such as Distemper, Influenza, etc.

Treatment.

Apply White Liniment to the throat from ear to ear and give the Fever Paste as directed; in stubborn cases a Physic Ball should be given, as in some instances the cough may be due to an irritation caused by Indigestion.

See Prescription No. 104, *page* 178.

CRACKED HEELS.

Cracked Heels may be due to several causes, such as an impure condition of the blood, stocking and swelling of the limbs, traveling in cold, slushy mud, or snow water.

Treatment.

Give the horse a Physic Ball and follow with the Horse Tonic. Wash the affected parts of the heels with warm water and soap. After they are clean and dry apply the Badger Balm. After the parts are once cleansed, washing should be omitted entirely, as water has a tendency to irritate and aggravate the Cracked Heels.

See Prescription No. 105, *page* 178.

COLIC.

There are only two kinds of Colic, Spasmodic and Wind Colic. They are often caused by a disturbance of the stomach and bowels, viz., indigestion and fermentation of feed.

Wind Colic does not cause the animals to be in such intense pain as Spasmodic Colic, but in both cases they look around to their sides. There is pawing, stamping and kicking at the stomach; frequent getting up and lying down; rolling from side to side and oftentimes lying on the back.

Colic is usually an ailment easy to detect, and unless it is given proper and immediate attention it often terminates in rupture or inflammation of the bowels, in which case death follows.

Treatment.

Back the horse into a single stall and by the use of a Drenching Hook drench him (see cut) with a dose of Colic Drench. Turn him into a loose box stall with plenty of bedding and give him an injection of four quarts of warm water (per rectum) by the use of a flushing outfit. Place a blanket on him. Give another dose of Colic Drench in from one to three hours if necessary, and follow with Laxotonic; apply a quarter of a pound of mustard thoroughly mixed with a little warm water, making a thin paste, which should be thoroughly rubbed on the abdomen or belly. Apply lard over the mustard in 12 hours to prevent its blistering.

Always allow a horse with Colic to lie down if he so desires. Never walk, trot or exercise a horse with Colic. A horse that is supposed to be subject to Colic should have his teeth examined and be given a Physic Ball and Tonic several times during the year, as this will prevent him from having Indigestion and Colic.

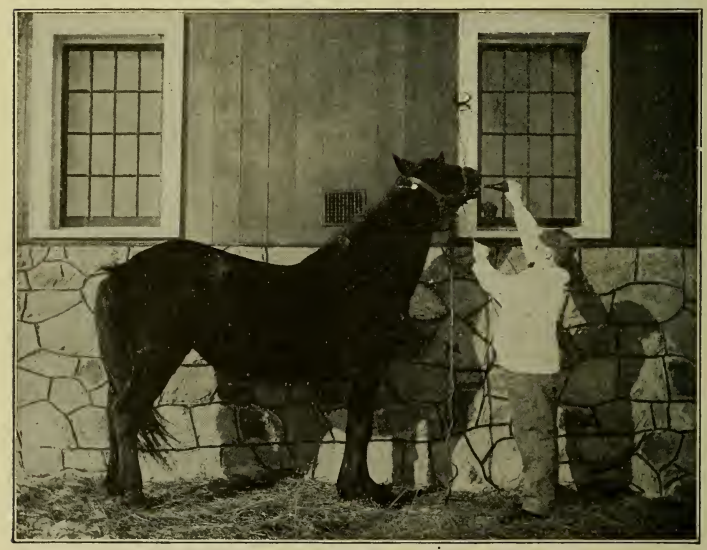
See Prescription No. 101, *page* 178.

DRENCH.

A drench means a liquid dose of medicine which is given to a horse by pouring same down the throat. While this may be a simple act, it is, however, accompanied by great danger, therefore a little knowledge and good advice may be very beneficial to the one who does the drenching.

Never drench a horse if he has a sore throat.

Never drench a horse through the nostrils.



How to Drench a Horse.

How To Drench.

Back the horse into a single stall. Fasten a Drench Hook to the rafters just above the horse's head; by means of a rope place a loop around the front upper teeth, and gently draw the horse's head up.

The medicine should be well shaken before giving. Drench the horse slowly, by giving him one swallow of the medicine at a time, allowing him sufficient time to swallow before pouring more medicine into his mouth.

A horse that is unable to swallow should have the medicine given to him in the form of a powder or paste, on the tongue, by the use of a spoon.

Great care should be exercised in examining a horse's throat to determine whether it is in a condition to be drenched or not. This can be ascertained by pinching the throat with the thumb and finger, and if this causes the horse to cough, then great care should be taken in drenching the animal.

CRAMP OF JOINTS.

This ailment is of frequent occurrence in young horses and its presence will be discovered when an attempt is made to back the affected animal out of the stall. If able to back him out at all, it will be with difficulty, for when started, he may be unable to lift one of his feet; but in some cases the affected limb will snap and crack and the animal will move off apparently sound, but after standing a while will experience the same trouble. This affection is located in the hock joint, but is often mistaken for stifle trouble.

Treatment.

Apply White Liniment all around the hock joint and give Horse Tonic.

See Prescription No. 106, *page* 178.

CURB.

A Curb is an enlargement which makes its appearance back of the hock just a little below the joint of the hock and is usually due to a bruise or strain.

Treatment.

During the hot or inflamed stage the parts should be thoroughly poulticed with Antiseptic Poultice until all the inflammation has subsided, then apply the Bone Blister according to directions. In stubborn cases it is well to alternate the Bone Blister with Absorbent according to directions upon the packages. This treatment will remove Curbs of every nature. The animal should not be worked or strained during the treatment.

See Prescription No. 107, *page* 178.

DISTEMPER.

(See Catarrhal Fever, Cattle Section, page 68.)

See Prescription No. 97, *page* 178.

DIARRHOEA.

Diarrhœa is an unnaturally loose condition of the bowels, where the fæces or manure passes away in a liquid condition, indicating a disturbance of the mucous membrane of the bowels. It may be caused by bad, or irregular teeth, indigestion, worms, or unwholesome food.

Treatment.

Have the teeth examined and dressed if need be, and give liberal doses of Horse Tonic and dry feed, such as bran and ground oats. Give the horse a reasonable amount of water, and it is better that the chill be taken off. Give Calf Cholera remedy in large doses.

See Prescription No. 108, *page* 178.

DROPSY.

Dropsy is a watery condition of the blood and is known by heavy swellings in the limbs and abdomen. The treatment consists in giving a Physic Ball and following with Horse Tonic. Give nutritious food and proper exercise.

See Prescription No. 109, *page* 178.

DYSENTERY.

Dysentery is a watery condition of the bowel contents, similar to Diarrhœa, and is treated in the same manner.

See Prescription No. 110, *page* 178.

ECZEMA.

Eczema is a disease of the skin and exists in various forms, but the most serious form is known as Mange. This form is due to a parasite which is very hard to destroy, therefore, the disease is equally hard to overcome; nevertheless, all forms of Eczema and Mange can be permanently overcome and cured.

Treatment.

Give a Physic Ball and follow with the Horse Tonic internally. After the effects of the Physic Ball have passed away, the animal should be clipped (if the season will permit) and thoroughly scrubbed with soft soap and a solution of Germ Killer. After the parts become entirely dry the animal should be thoroughly rubbed with the Skin Ointment. This treatment should be repeated every few days until the disease is completely cured.

See Prescription No. 111, *page* 178.

EVERSION OF THE UTERUS.

See Prescription No. 210, *page* 178.

EYE INFLAMMATION.

Inflammation of the eye may be due to an injury or to moon blindness. The treatment consists in bathing the eye with warm Antisepto solution several times daily, and injecting into the eye after each bathing some of the Eye Lotion.

The animal should be kept in a dark stable during a very aggravated case of sore eyes.

See Prescription No. 112, *page* 178.

FEVER.

A fever is an elevation of the temperature and is caused by a disturbance of one or more organs of the body, and the treatment consists in giving Laxotonic, followed by Fever Paste. Bran mashes and a liberal amount of cool water should also be given.

See Prescription No. 113, *page* 178.

FISTULA.

A fistula is a chronic discharge from a tube-like channel leading into a deep seated abscess, with no tendency to heal.

Fistulas are more common in horses than other animals and is a term commonly applied to a discharge from the withers, known as fistulous withers.

Fistulous withers are usually caused from an external injury. At first a large swelling appears, on one or both sides of the withers. When this occurs it is sometimes advisable to apply the Antiseptic Poultice until the fever and inflammation have been reduced; then wash off parts thoroughly and clip off the hair and mane, and apply Lucky Four Blister every two weeks as per directions until the enlargement disappears, or has been brought to a head, at which time it may be opened at the lowest point and thoroughly drained, the operator making an incision from two to three inches long. The cavity is then to be thoroughly washed

out with a solution of Germ Killer, then Healing Lotion or Absorbent should be injected, full strength, into the cavity. In this manner fistulas can be successfully treated.

See Prescription No. 114, *page* 178.

FLATULENT COLIC.

(See Colic, page 113, the treatment of which is the same.)

FLIES.

It is needless to say that flies are a nuisance to stock owners. However, they are not only a nuisance, but dangerous, for they are the means of carrying and spreading disease, thereby causing heavy losses to stock raisers and owners. They annoy horses to such an extent as to keep them in one continual fret and worry. It is impossible to keep a horse in flesh when thus continually disturbed.

Milking cows are often so disturbed by flies as to cause their owners serious loss, owing to the shortage of milk. It is for this reason that all horse and cow stables should be darkened during the fly season each morning, and the stables thoroughly sprayed with Fly Oil. This should be sprayed upon the cows while they are in the stable and a few minutes before milking time. When this is done the cow will quiet down and give her milk freely and naturally, yielding extra milk to pay many times for the Fly Oil. It is for this reason that a good Fly Oil is an invaluable preparation to have on hand during the fly season. "A word to the wise is sufficient."

See Prescription No. 115, *page* 179.

FOALING.

The required time of gestation, or the period in which a mare carries her colt, is eleven months, at which time special attention should be given the mare. Place her loose in a box-stall with plenty of bedding; the drinking water should have the chill taken from it, and her bowels should be kept in a natural condition by giving her laxative food.

After the labor pains have appeared, it would be well to keep watch of her, and if she does not deliver her colt within a reasonable length of time—say, one hour—it will be advisable to make an examination. Upon doing so, if the colt be in a natural position, the nose and front feet are the first to be felt. If such be the case, the attendant may assist the mare in delivering her colt by pulling on the front feet. Any other position would indicate an unnatural condition of foaling.

When the colt is born the navel cord should be tied two inches from the body with a string soaked in Umbilicure; the navel cord should then be cut about four inches from the body. Umbilicure should be applied three times daily to the navel cord until it dries up and drops off. This will prevent the colt from becoming infected with navel diseases. Important in connection with this article is the article on Navel Diseases in Colts.

See Prescription No. 116, *page* 179.

FOUNDER.

Founder is a congested condition of the feet, and so affects them as to leave them in a diseased condition unless properly treated. An animal may be foundered by being overfed, by being watered or fed when in too warm a condition for receiving same, or by overdriving.

The first thing noticed will be an inability to move, especially their feet. They

will stand with their hind feet pretty well forward and under the body, and if they are compelled to turn around suddenly, they will show evidence of great pain and lameness.

Treatment.

Bleed the animal by tapping the blood vessel in the neck. The seat of bleeding is about 12 inches from the angle of the jaw, and the operation should be performed by the use of a bleeding Flem on the left under-side of the neck.

The blood vessel may be raised by tying a string around the neck three or four inches below the point of bleeding. This should be drawn up rather snug. By so doing the blood vessel will fill rapidly with blood. The Flem should be placed and struck with a piece of heavy wood about 12 inches long. Always tap the blood vessel lengthwise. After you have let out from two to four quarts of blood, the string on the neck should be loosened and a pin passed through both edges of the opening in the skin and a small string of mane wound around the pin in the form of a figure 8. This will prevent the animal from further bleeding.

Give the animal a Physic Ball and reduce the temperature with Fever Paste. Keep the appetite up with Horse Tonic.

Good big applications of Antiseptic Poultice should be placed on each foot. They should be kept moist in front and behind by pouring water on them every few hours; place a blanket on the animal if in cold, and a fly sheet if in warm weather. Give soft feed and plenty of water.

If the animal shows signs of soreness in the feet in the course of 15 to 30 days an application of Lucky Four Blister should be made around the upper part of the hoof, and especially on the front feet.

See Prescription No. 117, *page* 179.

GLANDERS.

Glanders is a slow, contagious, incurable disease, usually confined to horses, but it may be transmitted to man.

The first symptoms of this disease is a discharge from the nose, and swelling of the glands between the lower jaw. As the disease advances small ulcers may be noticeable on the mucous membrane lining of the nose, and sometimes small sores on the hind limbs appear. The discharge from the nose is of a sticky nature. The nose of a glandered horse is usually very dirty, owing to the dust and dirt adhering to this sticky discharge, which is quite different from a horse afflicted with distemper or a cold.

The manger and feed box of a glandered horse is also usually smeared with this sticky material, and dirt collects on same. As there is no cure for glanders in horses, a description of this disease is given so as to enable the owner to detect it as early as possible, in order to avoid danger of becoming infected by this most dreaded disease.

Mallein may be used in determining whether a horse is afflicted with glanders, in the same manner as the tuberculin test is applied to cattle, taking temperatures and injecting the Mallein at the same hour as designated in that test.

It is advisable to destroy the animal as early as possible after the disease has been detected. Mangers should be torn down and the stall thoroughly scrubbed, and saturated with a double strength solution of Disinfectall. The harness, halter, and bridle of an infected horse should also be thoroughly disinfected in the same solution.

See Prescription No. 118, *page* 179.

GREASE HEEL.

This is a swelling of the legs and a breaking out of the skin, extending from hoof to hock and from hoof to knee. It is more often due to a bad condition of the blood than anything else.

Treatment.

Give a Physic Ball and follow with Horse Tonic. Apply Badger Balm to all inflamed parts and in severe cases apply Antiseptic Poultice over the Balm until the inflammation is gone, then continue with the Balm. Give the animal soft feed, such as bran mashes, grass, plenty of water, and keep him out of mud.

Do not wash off the leg unless you have to, but if you do, use a solution of Germ Killer, as water alone has a tendency to aggravate the case.

See Prescription No. 119, *page* 179.

HARNESS OR COLLAR GALLS

Are brought on from a chafing of the parts by the harness or collars. The parts chafed will first become hot, sore and inflamed; later on a scab will form, and if neglected when scab comes off, there is danger of a sore being left, under which pus cavities often form, causing no end of trouble.

If they reach this stage it will necessitate opening of the pus cavities, and require from 20 to 30 days to heal.

Treatment.

In ordinary cases of Harness and Collar Galls, apply Gall Balm; it will positively prevent and cure all Galls. If pus has collected, open up the sack and wash out the cavity with a solution of Germ Killer, then inject Absorbent.

See Prescription No. 120, *page* 179.

HEAVES.

Heaves is a derangement of the blood vessels and air tubes of the lungs. The most common cause is Indigestion, or the animal may be out of condition. As soon as a horse gets out of condition there is great danger of an attack of Heaves.

Treatment.

Give a Physic Ball and keep the animal from eating from 12 to 24 hours, then give Horse Tonic to tone up the system and digestive organs, and follow treatment by giving a moderate amount of feed with Heave Powder in it. Give water sparingly and a reasonable amount of hay. Dampen all the feed.

After you have given a Physic Ball, Horse Tonic and one package of Heave Powder, you can easily see how much you have improved him, and if he is not entirely cured, continue with the Heave Powder until he is well, and give a Physic Ball every two weeks.

See Prescription No. 81, *page* 179.

HIPPED.

The term "hipped" means the knocking down of the points of the hip bone. This can be done without injury to any joint, and for this reason the animal usually recovers from all lameness, but is always left deformed, though still useful.

Treatment.

Apply Badger Balm to all hot or inflamed parts around the hip until all heat, swelling and inflammation have disappeared Then make an application of Lucky Four Blister between hip and stifle, every two weeks, until the animal has fully recovered.

See Prescription No. 121, *page* 179.

IMPACTION OF THE BOWELS.

Impaction of the bowels means a stoppage of the bowels and the most frequent cause is overloading the stomach and bowels with bulky feed, such as straw or over-ripe hay. Another cause is paralysis of the bowels. It is for this reason that salts or oil should not be given a horse in this condition.

You will know this trouble by noticing that the horse acts as if he had the Colic. He will lie down, get up, perhaps pass a little water and a little manure, but only enough manure to deceive you. He will stretch himself, look around to his sides, and perhaps keep on eating.

Treatment.

Give a dose of Colic Drench and follow in three or four hours with a dose of Laxotonic. Repeat the Colic Drench and Laxotonic every six hours, giving them at intervals of three hours. Give four quarts of warm water (per rectum) three times daily, by the use of the flushing outfit. If the animal be in great pain, one-fourth pound of powdered mustard, mixed with a little warm water to make a thick paste, should be applied to the abdomen or belly. Apply lard over the abdomen in 12 hours, to keep the mustard from blistering. A Physic Ball should not be given unless in the early stage of impaction.

See Prescription No. 122, *page* 179.

INDIGESTION OR "OUT OF CONDITION."

This is a derangement of the stomach and bowels and is brought on by eating too much when the stomach is not in condition to digest food. You will know this trouble by the following symptoms: He will eat plenty, but will not do well. There will be a rough coat, lack of ambition, bowels either too dry or too loose. This is spoken of as being "out of condition."

Treatment.

Give a Physic Ball and follow with Horse Tonic. Repeat the Physic Ball every two weeks, and continue with the Horse Tonic until the animal has fully recovered, becomes fleshy, sleek, ambitious and able to do a good day's work. Give ground oats, bran and good tame hay, and see that he has regular exercise.

See Prescription No. 123, *page* 179.

INFLUENZA.

Influenza is a Catarrhal affection of the air passages, usually of the head and throat, but if neglected the disease will affect the lungs. It is similar to Distemper, and the care and treatment are much the same.

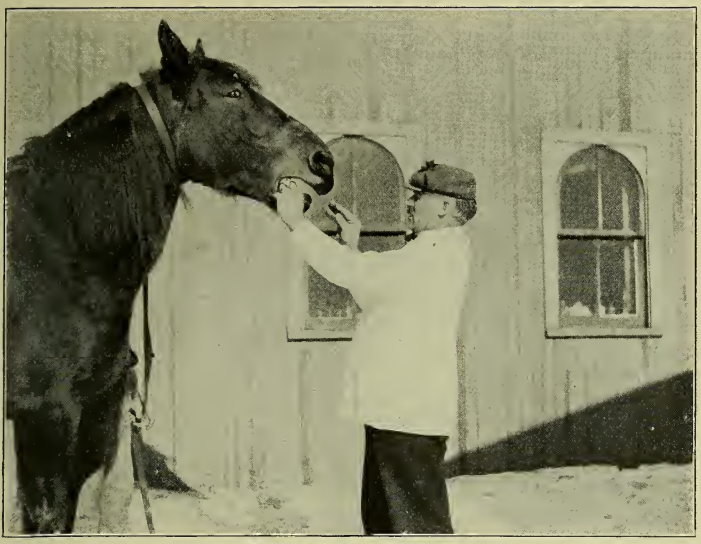
Treatment.

Give Fever Paste and apply the White Liniment to the throat from ear to ear.

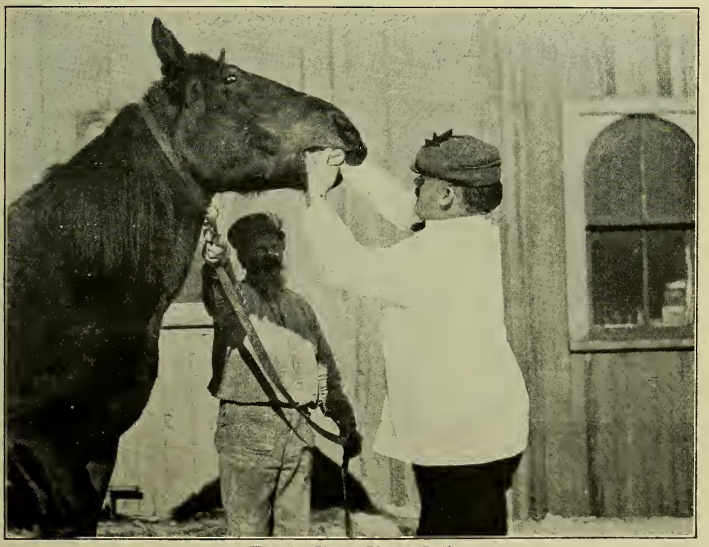
Keep up the appetite of the horse by giving Horse Tonic. Keep the bowels loose by giving Laxotonic and injections of four quarts of warm water (per rectum) by the use of flushing outfit.

In very severe cases of influenza, one ounce (two tablespoonfuls) of good whiskey should be added to the Fever Paste. If there be loud breathing, apply Antiseptic Poultice to the throat. Disinfect stables with Germ Killer or Disinfectall, hanging around the sick stall sacks that have been dipped in the solution, three times daily.

See Prescription No. 124, *page* 179.



Dr. Roberts Giving a Physic Ball.



How to Give a Physic Ball.

INJECTIONS.

The usual method to inject warm water into the rectum of an animal is by the use of a flushing outfit, and this is a very important thing to do in all ailments and diseases except where the bowels are already too loose.

An injection makes it possible and easy for an animal to empty and expel the contents of the rectum without straining enough to injure itself in any way. The amount of warm water used is from two to six quarts and is injected into the rectum by the use of a flushing outfit, placing the tube from four to twelve inches into the rectum, holding the funnel up as high as the hose will permit, and pouring warm water into it as fast as it will run into the animal.

KIDNEY DISEASE.

The chief work of the kidneys is to expel all impurities from the system, and if they fail to do this, you will soon have a sick animal. You will know it by a stiffened gait of the hind parts, the horse taking very short steps and being stiff in turning, showing an inclination to stretch as if wanting to pass water. This is a very serious disease and must receive prompt and proper attention.

Treatment.

In the early stage of the disease give a Physic Ball and follow with the Kidney Aid. Give warm water injections, bran mashes, good hay and plenty of drinking water. All horses should receive Kidney Aid daily when subject to this disease.

See Prescription No. 125, *page* 179.

LAMENESS.

Lameness is a disease or an injured condition of a joint, ligament, tendon, hoof or muscle of an animal, and can be located usually by heat, swelling, inflammation, enlargements, and lack of action in any part of the body or limbs. The signs of locations are as follows.

Hoof lameness improves with exercise. In cases of splint lameness a horse walks as though sound, but trots lame. In shoulder lameness a horse stumbles considerably. Joint lameness is usually indicated by heat and swelling. Tendon lameness the same. In ligament lameness there is no swelling, no heat and there will be no recovery unless the trouble is located and treated. In ringbone and curb lameness there is always an enlargement present. Bone spavin lameness sometimes appears without enlargement. The animal starts off on the points of his toes, and warms out of it as he is exercised. Bog spavin or thoroughpin always shows an enlargement.

Treatment.

Apply Antiseptic Poultice until all heat and inflammation are gone from the seat of the injury; then the parts should be clipped, washed, dried and Absorbent thoroughly applied in each of the following ailments: Ligament Lameness, Bog Spavin, Thoroughpins, Capped Elbows, Wind Puffs, Corns, and all unnatural enlargements on the body or limbs. In other forms of lameness the parts should be prepared as above mentioned and Bone Blister applied to the following ailments: Splints, Curbs, Ringbones, Bone Spavins and Capped Hock.

See Prescription No. 126, *page* 179.

DEEP-SEATED LAMENESS.

The parts should be clipped, washed, dried and Lucky Four Blister thoroughly applied where the following ailments exist: Shoulder Lameness, Sweeny, Stifle Lameness, Hip Joint Lameness, Sprained Joints, Tendons, and all parts

requiring good, deep, stimulating blister. Hoof lameness due to nail wounds, gravel or bruises, should be thoroughly poulticed with the Antiseptic Poultice, and all cavities washed out with a solution of Germ Killer, after which inject Healing Oil. Plug all holes in bottom of hoof with absorbent cotton dipped in Healing Oil to prevent foreign matter from getting into the wounds. The poultice should be applied after the hoof is thus treated, as it keeps down inflammation and lessens the danger of Lockjaw.

See Prescription No. 127, *page* 179.

LARYNGITIS

Is an inflammation of the lining of the throat and is often accompanied by a swelling which causes the animal to breathe very hard. Unless proper care and treatment are given there is great danger of the horse smothering to death. It is in these cases that the silver tube, placed in the windpipe by cutting a hole into it, is so often necessary.

Treatment.

Give Fever Paste. Apply White Liniment to the throat from ear to ear, and if there is hard breathing, apply the Antiseptic Poultice to the throat from ear to ear. Keep up appetite with Horse Tonic. Keep bowels open by warm water injections, disinfect stalls with solution of Germ Killer or Disinfectall.

See Prescription No. 128, *page* 179.

LEUCORRHOEA.

This is a catarrhal or inflamed condition of the mucous membrane or lining of the genital organs, and is a very detrimental disease if neglected. It often prevents mares from getting with foal.

Treatment.

Give Breeding Tonic. Wash out the vagina with a solution of Antisepto, by the use of a flushing outfit.

See Prescription No. 129, *page* 179.

LICE.

Lice are small insects which infest live stock and do a great deal more damage to them than the average stockman realizes.

It is a positive fact that if a stock owner knew just how much untold agony, to say nothing of the loss of flesh, that lice cause, he would not sleep until he had done all in his power to destroy the restless pests.

Treatment.

Diolice should be thoroughly applied and dusted into the hair on all parts of the animal, either horses or cattle.

See Prescription No. 130, *page* 179.

LUNG FEVER.

It is also called Pneumonia and is inflammation of the lungs. It may be caused in various ways, but the most common cause is taking cold and being neglected.

A horse with Lung Fever may or may not have a cough. He will stand with his elbows turned out most of the time, and seldom ever lies down.

Treatment.

Apply White Liniment to both sides of the chest over the ribs and also the throat. Give Laxotonic to loosen the bowels.

Give Fever Paste to reduce the fever. Give Horse Tonic to keep up the appetite. Give one gallon of warm water as an injection (per rectum) to keep the bowels

open. Dip gunny sacks in a solution of Germ Killer or Disinfectall three times daily and hang them around the sick stall to kill the germs which are always present.

The stall should be ventilated. Plenty of sunlight. Keep stall warm in winter and cool in summer. Place a blanket on the animal if needed. Keep the stall clean, well drained and use plenty of bedding. Give plenty of cold water, bran mashes and grass in season.

See Prescription No. 131, *page* 179.

LYMPHANGITIS.

This is inflammation of the lymphatic glands of the body or limbs, and is more commonly known as "Monday Morning Disease." It comes on from Sunday rest and high feeding. It is more often seen in the hind limbs than in the front ones, and is more liable to affect the left leg than the right.

Treatment.

Give a Physic Ball and follow with Horse Tonic. If the fever be high, give Fever Paste. Apply the Badger Balm to all swellings of the limbs or body and rub it in thoroughly. Give soft feed, such as bran mashes, grass in season, and lots of exercise when the animal is able to take it.

See Prescription No. 132, *page* 179.

MANGE.

Mange is a skin disease which comes under the head of "Eczema."

See Prescription No. 111, *page* 179.

MOON BLINDNESS.

This is a disease of the eyes, and it is also known as Periodical Opthalmia. It gets both of the names from the fact that it affects a horse at regular periods and was formerly supposed to be controlled by the moon. It may affect one or both eyes at any time.

Treatment.

Remove wolf teeth, if any, by pulling them, instead of breaking them off. There is no treatment that will cure this disease, but improvement has been effected by giving the animal a Physic Ball and following with Horse Tonic.

Bathe the eyes with a solution of Antisepto three times daily and then inject the Eye Lotion as directed, until all inflammation is gone. Keep animal in dark stable during the stage of intense inflammation.

See Prescription No. 133, *page* 179.

MOUTH SORE.

If the animal's teeth need dressing, have them dressed and apply Healing Oil to all sore or inflamed parts. Change bits if necessary.

See Prescription No. 134, *page* 179.

NASAL GLEET

Is a Catarrhal Discharge from one or both nostrils and is often caused by a bad cold or Distemper.

Treatment.

Give a Physic Ball and follow with the Horse Tonic. Apply White Liniment to the nostril or nostrils affected, as high up as to come even with the lower part of the eyes, and within three inches of the hole of the nostril. This treatment should be continued until the animal is entirely cured.

See Prescription No. 135, *page* 179.

NAVEL DISEASE IN COLTS.

This is a disease that affects the navel cord, and this takes place oftentimes at birth, due to the part becoming infected by germs which not only cause the navel to become sore and inflamed, but enter the body at this point and cause a swelling of the joints of colts. This results in lameness and a gathering of matter or pus, and unless proper treatment is promptly given, the disease will cause a sloughing of the joints and death will follow.

Treatment.

It is better to prevent this disease than to treat it. This can be done by applying Umbilicure to the end of the navel cord for several days immediately after birth.

Treatment of the Disease After it has Caused the Joints to Swell.

Give Fever Paste internally and apply Badger Balm and Antiseptic Poultice externally. Keep colt from lying on damp ground or wet stalls.

See Prescription No. 136, *page* 180.

NAVICULAR LAMENESS.

This is caused by continual pounding on hard surfaces, such as pavements, and the treatment is not very satisfactory. Removing a part of or severing the nerves of the feet will enable an animal to do work for some time without limping, but there is great danger of the foot dropping off.

OPEN JOINT.

This means an injury to a joint to such an extent as to cause the joint water to flow out. The joint water forms as fast as it flows out, so as soon as the flow is stopped the joint fills up again with as much of the fluid as Nature requires to lubricate the joints.

Treatment.

Clip off the hair and wash the joint and wound with a solution of Germ Killer. When dry, apply Lucky Four Blister to the entire joint, as per direction given on Blister. Apply Absorbent to the wound. Do not disturb the scab or wash the wound after the first washing. If the discharge of joint water does not cease in four days, one pint of the Antisepto Solution, which is made by dissolving one tablespoonful of Antisepto in a pint of water which has been boiled and cooled to blood heat, should be injected once daily into the joint until discharge ceases. Follow with Absorbent.

See Prescription No. 137, *page* 180.

PARALYSIS

This is a loss of power, both of motion and of sensation, but one may occur without the other. The kind of Paralysis which is most common is due to Azoturia or an excess of uric acid in the blood, and must be treated the same as Azoturia.

See Prescription No. 138, *page* 180.

PARASITES

Is a term applied to a small living organism which lives on other animals, burrowing into the skin and producing irritation and a disease such as Mange in animals, or the Itch in human beings. For treatment see article on "Eczema."

See Prescription No. 139, *page* 180.

PARTURITION.

This is the act of giving birth to the offspring. The animal should be placed in a loose box-stall and given plenty of bedding. After the mare has labored for several hours, she should be examined to see if everything is all right. If she is not, she should be given special attention. After colt is born, the mare should be washed out with a solution of Antisepto (two quarts), then place one pound of lard (in chunks) into the womb. Do this once daily until she has recovered.

See Prescription No. 140, *page* 180.

PHARYNGITIS.

This is very much like "Laryngitis" and the treatment is the same.

See Prescription No. 141, *page* 180.

PENIS.

This is the genital organ of the male and should be given some attention, such as washing out the sheath with a solution of Germ Killer every sixty days, and if the penis be sore, apply Healing Oil.

PILLS

Are Physic Balls, of which all horses should receive no less than four each year, and at most, one every two weeks, until put in good condition.

Whenever the blood is out of order, the skin rough or covered with pimples, or the animal has a staring coat, no gloss to it, or is unthrifty in any way, you will know he needs a Physic Ball and it should be followed with Horse Tonic.

PIMPLES.

Pimples are only an indication that the blood is out of order, and the proper method of treatment is to give a Physic Ball and follow with the Horse Tonic if the pimples do not disappear readily. Apply Skin Ointment to all parts affected.

See Prescription No. 142, *page* 180.

PINK EYE.

(See Catarrhal Fever, page 111.)

See Prescription No. 97, *page* 180.

PLEURISY.

Pleurisy is usually brought on by taking cold. It is an inflamed condition of the covering of the lungs and resembles Lung Fever. Give Fever Paste internally and apply White Liniment externally to both sides of the chest, also to the throat. Give warm water injections (per rectum) to keep bowels open, and care for the animal the same as you would in the case of Lung Fever.

See Prescription No. 143, *page* 180.

PNEUMONIA

Is "Lung Fever" and the treatment is the same. (See page 123.)

See Prescription No. 131, *page* 180.

POLL EVIL.

Poll Evil is a large, hot, painful swelling on the forward and upper part of the neck just between and back of the ears, and is usually caused by bruises or violence of some form, such as jamming the head against the ceiling of the stable, or rearing up and falling over backwards, the result being the same, regardless of the cause. After the parts become hot, inflamed and swollen, pus or matter usually forms, and unless it is overcome by absorption, the cavities become filled with pus and later on break open if not previously lanced.

The treatment consists, when it first makes its appearance, in repeated applications of Antiseptic Poultice until the fever and inflammation have been reduced; then wash off parts thoroughly and clip off the hair and mane, and apply a good application of Lucky Four Blister. This may be repeated every two weeks, or until the enlargement has disappeared or been brought to a head. In the latter case it should be opened at the lowest point and thoroughly drained, the operator making an incision from two to three inches long. The cavity then is to be thoroughly washed out with a solution of Germ Killer and the Healing Lotion or Absorbent injected once daily. In this manner any Poll Evil can be permanently cured.

See Prescription No. 144, *page* 180.

PURPURA HEMORRHAGICA.

This is an intense swelling of the limbs, head and under the belly, including the sheath or udder. The swelling comes on slowly but steadily and must run its course, causing the eyes to close from the intense swelling.

Treatment.

Give a Physic Ball at once and give Fever Paste to reduce the fever. Give Horse Tonic to keep up appetite. Give warm water injections (per rectum) to keep bowels open and apply Badger Balm, well rubbed in, to all swollen parts. If the heels crack, use Healing Oil and Healing Lotion—first one, then the other, as directed.

See Prescription No. 145, *page* 180.

QUITTOR

Is like a Fistula, only it is located in the foot, and is often caused by nail pricks, bruises or gravel in the foot.

Treatment.

Wash part with Germ Killer solution and poultice the feet with the Antiseptic Poultice until most of the fever is gone, then inject Absorbent.

See Prescription No. 146, *page* 180.

RING BONE.

A Ring Bone is an unnatural growth of the bone, which takes place at the pastern joints and is liable to appear on any foot, but generally on the hind foot.

Treatment.

In the early stages of Ring Bone, clip off the hair and wash the parts thoroughly with soap and warm water. When dry, apply Bone Blister to the ring bone or any enlargement of like nature, and continue the treatment until all lameness is gone.

See Prescription No. 147, *page* 180.

RING WORM.

Ring Worm is a skin disease and is due to parasites which live just beneath the skin and must be destroyed before the disease can be cured.

The treatment is the same as for Skin Disease and Eczema. (See "Eczema," page 116.)

See Prescription No. 148, *page* 180.

ROARING.

Roaring is a disease of the throat and is caused by a neglected case of Distemper. It is very hard, and in fact, almost impossible to cure this disease except by an operation.

The following treatment often proves beneficial:

Apply Lucky Four Blister to the throat from ear to ear according to directions. Repeat every two weeks until at least four treatments have been given.

See Prescription No. 149, *page* 180.

RUPTURE.

Rupture is a term generally applied to an injury to the tissues which hold the bowels in their natural position.

A rupture of this kind may appear in different locations, but the rupture which the stock breeder has to contend with, and the only one which he can treat and improve the condition, is a rupture in a suckling colt, where the bowels come down into the scrotum. This may occur at any time from the day of birth to full maturity. It will be detected by an unnaturally enlarged condition of the scrotum.

The treatment is to apply Healing Oil once daily to the entire scrotum until it regains its natural size.

See Prescription No. 150, *page* 180.

SCALDS AND BURNS.

Scalds usually occur from having water applied when too hot to any part of the animal.

The most common kind of burns that horse raisers have to contend with, are caused by the horse getting tangled up in a rope, either by being tied too long or staked out to grass. This is called a rope burn and if neglected, often results in a serious, inflamed wound, which may leave a thick, diseased scar or ridge.

Treatment.

For either Scalds or Burns, apply the Badger Balm, and if it be where a poultice can be used, apply the Antiseptic Poultice. This can be continued until all heat and inflammation are gone. Then use Absorbent.

See Prescription No. 151, *page* 180.

SCRATCHES.

Scratches or cracked heels is an inflamed, irritated and diseased condition of the skin, usually at the fetlock of either front or hind limbs, but more often the hind ones. If this be neglected, it is liable to terminate in what is called Grease Heel. Scratches may occur at all seasons of the year, but are more liable to come on in the spring. This goes to show that in many cases they are due to a bad condition of the blood.

Treatment.

Give a Physic Ball and follow with the Horse Tonic. Wash the legs and feet off thoroughly with a solution of Germ Killer. The washing should not be repeated after the limbs are once clean. Then apply the Badger Balm, and if it be a very severe case, apply the Antiseptic Poultice until all heat and swelling have disappeared. Continue with the Badger Balm until the skin is healed. The animal should be kept out of the mud and snow water, as all water and moisture are irritating to the skin when thus afflicted.

See Prescription No. 152, *page* 180.

SHOE BOILS.

(See "Capped Elbow," page 111.)
See Prescription No. 94, *page* 180.

SKIN DISEASE.

Skin disease comes under the head of "Eczema" (see page 116).

See Prescription No. 111, *page* 180.

SORES.

There are various kinds of sores, some being superficial, and others deep seated. Both superficial or surface sores and deep seated sores or pus cavities may be caused by bruises, punctures, wire cuts, etc.

Treatment.

In all cases of sores, the first thing to be done is to cleanse them. This should be done with a solution of Germ Killer. If it be a deep seated sore, the cavity should be thoroughly syringed out with this solution, and then Absorbent should be injected.

If a surface sore, it should be cleaned in the same manner, then treated with the Healing Oil. If proud flesh appears, apply Absorbent.

See Prescription No. 153, *page* 180.

SORE THROAT

Is an inflamed condition of the mucous membrane lining the throat, and it may be due to taking cold, inhaling smoke, or to Distemper or Catarrhal Disease.

Treatment.

Apply the White Liniment to the throat from ear to ear for three to four days, discontinuing for a few days and resuming the treatment later if needed.

Give Fever Paste on the tongue. The appetite may be kept up by the use of Horse Tonic. The bowels should be kept open by giving four quarts of warm water (per rectum) as an injection, using flushing outfit.

The animal should be allowed plenty of cold water and soft and nutritious feed, such as bran; flaxseed tea may be given freely. It is made of ground flax seed steeped in hot water and allowed to stand for several hours. Feed the entire mixture.

See Prescription No. 154, *page* 181.

SPAVIN.

(See Bog and Bone Spavin, pages 109 and 110.

See Prescription Nos. 85 *and* 86, *page* 181.

SPEEDY CRACK.

Is similar to "Scratches" or "Cracked Heel," and the treatment is the same (see pages 128 and 113.

See Prescriptions Nos. 85 *and* 86, *page* 181.

SPLINTS.

A Splint is a bony enlargement which develops on the canon or shin bone of the horse between the ankle and knee or between ankle and hock. They usually form on the inside of the front limb, but do occasionally appear on the outside. They vary in size from that of a small kernel to a hickory nut. They can usually be seen or felt very readily. Splint lameness has a peculiarity of its own, inasmuch as the horse is apt to walk perfectly sound and trot lame. The horse usually grows worse by exercise. Splints are usually caused by hard road work or injuries. Either will produce a growth of bone beneath the thin tissue paper like covering of a bone, and it is this growth that produces lameness. The treatment of a splint consists in the application of ingredients such as are contained in Bone Blister. When this growth or enlargement is absorbed, it disappears and so does the lameness, if the animal is thus afflicted. They are seldom seen on the hind limbs

See Prescription No. 155, *page* 181.

SPRAINS.

A Sprain is an injury to the joint, ligament, tendon or muscle, and is usually detected by heat, swelling, soreness or lameness. All heat, swelling and soreness should be overcome by applying the Antiseptic Poultice and if there be lameness after the heat and swelling have been relieved, the Absorbent or Lucky Four Blister should be applied.

See Prescription No. 156, *page* 181.

STERILITY.

(See Barrenness in Mares, page 108.)

See Prescription No. 83, *page* 181.

STRANGLES.

Strangles is the same disease as Catarrhal Fever or Distemper (see page 111).

See Prescription No. 97, *page* 181.

STRING HALT

Is an injured condition of the nerves of the hind limbs, and is known by an unnaturally high lifting of the limbs. This trouble is incurable.

A horse out of condition will show this disease more than one in a good, healthy state, so the only thing to do is to get the animal in a strong, healthy condition. This may be done by giving Physic Ball and Horse Tonic until the object has been attained.

See Prescription No. 157, *page* 181.

SUNSTROKE

Is simply prostration from heat, and occurs only in very hot weather.

The animal may be going along as usual, but will suddenly get dizzy, weak and sweat profusely, then suddenly stop sweating and begin to pant. His nostrils get large and he will hang his head, and it is at this point that he is liable to go down.

Treatment.

Cold water should be applied to all parts of the body and head by the use of a light spray or by sponging. This should be kept up until he cools off. Move him to a shady place, where he may get fresh air, and give him one tablespoonful of Fever Paste and eight ounces of good whiskey as one dose, and follow every three hours with a tablespoonful of the Fever Paste and two ounces of good whiskey until he recovers.

Give a gallon of tepid water (per rectum) by the use of the Flushing Outfit. Allow the animal to drink tepid water, and as he recovers, give him bran mashes and soft foods.

See Prescription No. 158, *page* 181.

SWELLING.

Swelling is a hot, inflamed condition, and the treatment consists in giving a Physic Ball internally, following this with the Horse Tonic. Apply Badger Balm well rubbed in, and if possible to use a poultice, use the Antiseptic Poultice.

See Prescription No. 159, *page* 181.

SWEENY.

Sweeny is a shrinking of the muscles and is caused by an injury to the point of the shoulder; for this reason the hair should be clipped from the entire shoulder blade, and the point of the shoulder, Lucky Four Blister or White Liniment should be applied to both the point of the shoulder and to the depression at the shoulder blade.

In many cases it is an advantage to use first one of these remedies, then the other.

The animal should receive daily exercise; sometimes a little light work may be beneficial, but heavy work is out of the question.

See Prescription No. 160, *page* 181.

SHEATH.

The sheath is the cover of the penis of the male, and the only attention that is usually required is to occasionally wash out with soap and warm water the collection of dust and dirt in the sheath, which sometimes produces bad results if neglected. It may cause portions of the skin to slough off, leaving raw surfaces, which come in continual contact with the balance of the unclean parts. If there be signs of soreness, the dirt from the sheath should be washed out at the point of the penis, and should be examined, as there is frequently a collection of cheesy-like material collecting just in front of the urethra, where there is a little blind sack that favors the collection of foreign matter. This gathering is commonly known as a bean. It should be examined and the sheath washed no less than four times a year. If there be soreness of any nature on the penis, the Healing Oil should be applied to the inner parts of the sheath.

SYNOVITIS.

This is inflammation of the synovial bursa and joints, the parts of the joints which come in contact with one another. This is commonly known as inflammation of the joints. and may be recognized by heat, swelling and intense lameness. Bruises, slips or strains are frequent causes of synovitis.

Treatment.

Apply Badger Balm thoroughly rubbed into the parts of the inflamed joints, then apply the Antiseptic Poultice. Continue this treatment until all heat and swelling have disappeared. If lameness continues, apply Lucky Four Blister according to directions, and repeat every two weeks until lameness is overcome.

See Prescription No. 161, *page* 181.

TEETH (IRREGULAR).

All owners of horses should examine their horses' teeth and should be able to tell by examination whether they should be dressed or not.

The way to examine them is to back the horse into a single stall, remove the halter or bridle, and if need be put a neck strap on the animal, then stand directly in front of the horse and reach into the mouth, grasp the tongue and pull it out and to one side with one hand, and lift the sides of the cheeks with the other. In this way you will be able to see the full set of molars or grinders. If they need dressing, the inside edges of the lower teeth and the outside edges of the upper teeth will be ragged, rough and sharp.

Sometimes in examining a horse in this manner you will find one or more teeth considerably longer than the others, in which case, or where the edges are sharp, the teeth should be properly dressed by a qualified veterinarian who thoroughly understands dentistry. In fact, all horses should be thus examined, and especially horses that are out of condition.

TENDON SORE.

When a horse has a sore or lame tendon, or when inflamed so as to produce lameness, it should first be thoroughly rubbed with Badger Balm. Then apply the

Antiseptic Poultice until all heat and swelling have disappeared, after which remove the lameness by applying Lucky Four Blister as directed.

See Prescription No. 162, *page* 181.

TESTICLES.

Swollen testicles may occur as the result of bruises, kicks or stings, and the trouble frequently happens to stallions during breeding season.

Bathe parts with warm water, then apply Badger Balm, thoroughly rubbed in, and follow by the use of the Antiseptic Poultice. This is done by placing a wide bandage around the belly, just in front of the hips, then attaching another strip to it just at the point of the sheath; bring up between the thighs and along the side of the tail and fasten to the other strip just over the loins or kidneys. In this manner a poultice may be applied easily, and its use is very important in such cases.

See Prescription for Scalds and Burns No. 151, *page* 180.

THOROUGHPINS

Is an unnatural enlargement of the hock, and is indicated by a puff in front and outside of the hock, passing entirely through the hock. This trouble may happen to horses of any age, but the treatment is very much more satisfactory in young horses than in old ones, and is as follows:

Treatment.

Clip off the hair from all parts and wash with warm water and soap. A few hours later apply Absorbent to the puffs, both in front and at the side of the hock. In this manner all curable cases of Thoroughpins can be cured.

See Prescription No. 163, *page* 181.

THRUSH IN FEET.

Thrush is known by a dark gray, unhealthy secretion of matter oozing from the middle or either side of the frog of a horse's foot. This discharge, if neglected, is liable to eat its way through the sole of the foot, oftentimes involving the joints and sometimes causing intense lameness and swelling of the limbs. It is at this stage of the disease that blood poisoning is liable to set in and death results.

This disease affects both horses and mares, more often affecting the front feet of geldings or stallions and the hind feet of mares, this being due to the filth and moisture caused by the urine.

Treatment.

Thrush is to be treated by cleanliness—the removal of all direct causes and a return of the frog to its normal condition. The diseased or ragged condition of the frog should be pared away, and in severe cases the foot should be poulticed for a few days with the Antiseptic Poultice. The center of the frog and the grooves on either side are then to be cleaned and well filled with wads of cotton soaked in Germ Killer (full strength). The foot should be dressed in this manner once daily. If there be intense fever in the feet and swelling of the limbs, this will indicate that the horse requires internal treatment. For this give a Physic Ball and follow with Horse Tonic; but in all mild cases of Thrush in the feet, pack the frog and affected parts with wads of cotton soaked in Germ Killer (full strength) and you will overcome the disease.

See Prescription No. 164, *page* 181.

TUMOR.

The only possible way for stock owners to remove Tumors is by use of the Absorbent. If that should fail to accomplish the result, the knife must be resorted to.

See Prescription No. 165, *page* 181.

ULCER.

An ulcer is an open sore on an external or internal surface of the body. Ulcers are caused by inflammation combined with poor reaction on the part of the tissue affected. Local injuries are the immediate exciting cause of external ulcers. Internal ulcers, such as those of the mouth, stomach and intestines, are caused either by injury by foreign bodies, such as a kick, or by micro-organisms and decomposed secretions or other contents.

While the tendency of ulcers is to get well spontaneously, nature is best assisted by cleanliness of the parts by washing them thoroughly with a warm solution of Germ Killer and applying Healing Oil to all affected parts, alternating with Absorbent. For intestinal ulcers give Laxotonic and injections of warm water.

See Prescription No. 166, *page* 181.

URINE RETAINED.

The retention of the urine in mares may be easily overcome by passing a female catheter, which is a silver plated tube a little larger than a lead pencil and about twelve inches long, into the neck of the bladder, which is located on the floor of the vagina. But the retention of the urine in a gelding or stallion is a difficult matter to overcome, as an inexperienced person would be liable to have trouble in passing the male catheter, which is usually about three feet long. However, if there be retention in the mare or horse, a bottle of Colic Drench should be given, as this contains ingredients which act upon the urinal organs, and by so doing may overcome the necessity of drawing the water.

See Prescription No. 167, *page* 181.

WARTS

Are little tumors which often appear very suddenly on any part of the body or limbs, angles of the mouth, corners of the eye, tips of the ears, etc. For this reason they are difficult to remove, and great care should be taken in their removal. The only safe and reliable method is to apply Wartine to warts of all kinds, until they are removed. It requires a longer time to remove some kinds of warts than others. The large warts should be pulled out by the roots with the fingers or forceps, and then apply Wartine to the wound thus made.

See Prescription No. 168, *page* 181.

WIND BROKEN.

This trouble is very much like Heaves and should be treated in the same manner. (See Heaves, page 119.)

See Prescription No. 81, *page* 181.

WIND GALLS.

Wind Galls are sometimes called Wind Puffs, either term being correct. They are enlargements of the synovial bursa, and usually appear on the fetlock joint of the front or hind limbs, but more often on the hind limbs.

Treatment.

Clip off the hair over the wind gall, wash the parts thoroughly with warm water and soap, and in a couple of hours apply Absorbent. Do this daily until the trouble disappears. Do not repeat the washing.

The animal will improve more rapidly if kept from doing hard work, and kept off the pavement.

See Prescription No. 169, *page* 181.

WIRE CUTS.

Wire Cuts are usually caused by wire containing barbs or sharp prongs. These barbs or prongs are usually in a rusty condition, and for this reason a wire cut is considerably more dangerous and harder to handle than most any other wound; wire cuts may also be produced by smooth or woven wire, but the animal, in such cases, must have come in contact with such wires with considerable force. When this occurs the bruise is usually as serious as the cut, and both have to be properly treated in order to obtain the best results.

Barb wire cuts are very dangerous for the reason that when the animal comes in contact with a fence with sufficient force to produce an ugly gash there is great danger of the sharp, rusty barbs passing considerably deeper into the flesh than the wire itself, and by so doing may penetrate the joints in that vicinity. When this occurs you have to contend with both a wire cut and open joint. The open joint means the escaping of synovia, or joint water, from the joint.

Treatment.

All wounds should be thoroughly washed with a solution of Germ Killer. When the skin and muscles are cut to more than two or three inches in length it is advisable to stitch up with silk or linen thread, bringing the skin together. This may be done successfully in several ways, but it is advisable to make stitches about one-half or one inch apart, passing the needle through both edges of the skin; then cut the thread sufficient in length to be tied in a hard knot. These are called interrupted sutures.

Another method would be to begin at one end of the cut, passing the needle through the skin and back through the end of the thread, then to the opposite side of the wound, and in this manner drawing the edges of the skin together, sewing the entire wound without cutting the thread. This is called uninterrupted sutures. The entire wound should then be dressed with Healing Oil once daily. Daily washings of the wound with Germ Killer solution and Healing Oil are necessary. After the stitches are removed the wound may be washed once daily with Germ Killer solution. Apply Absorbent with a small brush to the wound itself, using Healing Oil to keep the skin moist. In this manner any wound may be treated with success, regardless of its size.

See Prescription No. 170, *page* 181.

WORMS.

There are several classes of worms, but the same treatment applies to the various kinds.

It is a very important thing to rid your horse of worms and keep him from having them. In order to do this a package of Worm Powder should be given. It should be followed by a Physic Ball, which expels all destroyed and stupified worms, including the little deadly red worm, which is causing heavy losses.

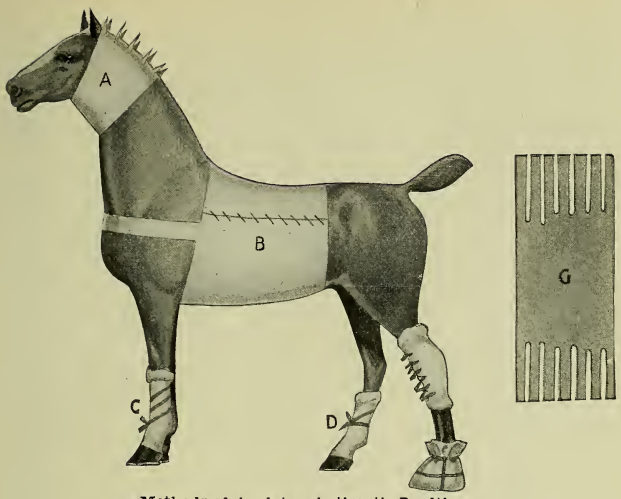
In connection with this treatment, two to four quarts of Germ Killer solution, half strength, should be given (per rectum) as an injection by the use of Flushing outfit, two or three times per week. This will rid the rectum of the little pin worms, which are sometimes very hard to eradicate. This treatment can be repeated if necessary.

See Prescription No. 171, *page* 181.

WOUNDS.

There are many different kinds of wounds, which are caused in different ways. Most wounds are caused by external injuries, while others may be caused by improper condition of the blood.

Wounds of every nature, both surface and deep seated, should be washed with a solution of Germ Killer; after they are thoroughly cleaned by injecting this solution into the cavity, use Absorbent and Healing Lotion alternately.



Methods of Applying Antiseptic Poultice.

A—Throat Pad.
B—Pneumonia Jacket.
C—Fetlock Pads.
D—Fetlock Pads.
E—Hock Bandage, Manytail.
F—Poultice Bandage.
G—Manytail Bandage.

Apply and inject into the following deep seated wounds, and into Abscesses and Pus and Fluid Sacs, after they have been opened, such as Poll Evil, Fistulous Withers, Capped Elbow, Capped Hock, Distemper, Abscesses on any part of the body, open collar or harness Galls, Blood Blisters (or bruises), often seen at the point of the breast bone, abscess of the udder, punctured or lacerated wounds, such as may be caused by barb wire, tin, glass, nails or slivers, sore feet due to rope burns, wounds left after removing warts.

It is a difficult and important thing in all deep seated wounds to keep proud flesh from forming, and to cause the wound to heal nicely without a scar. This can be done if the above directions are clearly and carefully followed.

Germ Killer cleanses the wound.
Healing Oil, soothes and heals.
Absorbent prevents proud flesh.

Use Gall Balm for superficial or surface wounds, such as Collar Galls, Harness Galls, Cracked or Inflamed Skin, Cracked Heels, Speedy Cuts (or Scratches), Bruises or Irritated Skin, such as is often noticed on the knees, ankles, hocks, and hips from lying on cement or rough floors without much bedding. For sore mouth, both around the mouth, and inside, bites of insects, poisoned or inflamed condition of the skin, use Healing Oil.

Healing Oil should be used freely on instruments and hands of operator, also applied to the scrotum of all live stock castrated, such as calves, colts, lambs and pigs.

Healing Oil is invaluable to veterinarians or to parties who make a business of castrating stallions, bulls, boars and rams, as it will prevent infection and blood poisoning in all surgical operations.

See Prescription No. 172, *page* 181.

Dr. David Roberts' Absorbent Saves Valuable Race Horse.

DR. DAVID ROBERTS,
Waukesha, Wisconsin.

DEAR SIR:—Electric Maiden, 2:13½, was afflicted with two large goiters on her neck. I had great fear, and in fact had made up my mind that she was ruined as a race horse on account of these unnatural growths, but upon learning that you had an Absorbent specially prepared to remove unnatural enlargements from the body and limbs of a horse, I was determined to try it, so I purchased one bottle and applied it according to directions, and in a remarkably short time it reduced the enlarged glands to their natural and normal condition.

I consider that your Absorbent has done more than I ever expected of any remedy. I take great pleasure in recommending this valuable remedy to other horsemen. Yours truly, T. J. DUNBAR,
Milwaukee, Wis.

Wisconsin State Industrial School Uses Our Remedies in its Live Stock Department With Great Success.

STATE INDUSTRIAL SCHOOL,
WAUKESHA, WIS.

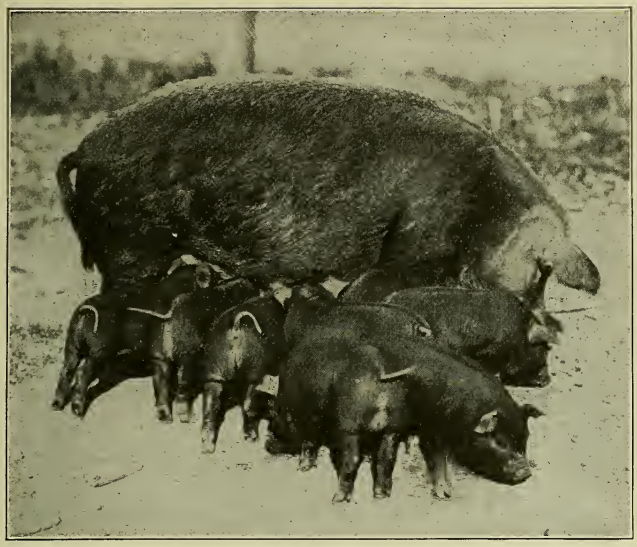
DR. DAVID ROBERTS,
Waukesha, Wisconsin.

DEAR SIR:—At one time I was superintendent and manager of the Captain Pabst stables in the city of Chicago. Later I conducted a livery business at the Aldine Square Livery on Vincent Avenue. At times I had as high as ninety head of boarding horses, and as a rule each owner or family employed their own veterinarians and used different veterinary prescriptions in the care and treatment of their animals. This necessitated the calls of many different veterinarians and the use of a great many different veterinary prescriptions, and it gave me a good opportunity to witness the different methods of treating animals, and the most interesting of all things was to watch the results of different prescriptions, such as Condition Powders and Colic Cures, and with this experience I must say of all the Colic Cures I saw administered or administered myself to these different boarders, that of Dr. David Roberts' Colic Drench has, in my opinion, saved more horses and brought about better results than any that I have witnessed or experienced, and I take pleasure in recommending your Colic Drench for all forms of colic.

I have had considerable experience with your Horse Tonic, and like it very much and can highly recommend it for all horses out of condition.

K. C. DOUSMAN,
Manager of the Live Stock Dept. of the Wisconsin State Industrial School.

Mr. A. E. Conklin, of Salt Point, N. Y., under date of April 3, 1911, writes: "Your Colic Drench which you sent me I used on a neighbor's horse which was given up as dying, which the local veterinary could not help at all. The horse showed improvement in an hour, and I followed it up with Laxotonic and he came out all O. K."



SWINE

Care and Management of Swine

Selection—Feeding—How to Get Best Results—
Gestation—Farrowing

Symptoms and Treatment of Swine Diseases

Miscellaneous Information

Care and Management of Swine.

DUROC JERSEY SWINE.

Duroc Jersey swine, sometimes called Jersey Reds, Durocs, etc., really originated in New York State, but have been bred in Wisconsin for about thirty years. In 1883 a number of Wisconsin breeders of the so-called Red Hog, met at Elkhorn, Wis., and formed an organization, known as the Duroc or Jersey Red Swine Club, for the purpose of advancing the improvement of the breed, and using a registry of pedigrees.

The Duroc Jersey pig should be long, quite deep bodied, not round, but broad on the back, and holding the width well out to the hips and hams. The head should be small, compared with the body, with the cheek broad and full. and considerable breadth between the eyes. The neck should be short and thick, and the face slightly curved, with the nose rather longer than in the English breeds; the ears rather large and lopped over the eyes and not erect. Bone not fine, nor yet coarse, but medium. The legs medium in size and length, but set well under the body and well apart, and not cut up high in the flank or above the knee. The hams should be broad and full well down to the hock. There should be a good coat of hair of medium fineness, inclining to bristles at the top of the shoulder; the tail being hairy and not small; the hair usually straight, but in some cases a little wavy. The color should be red, varying from dark, glossy, cherry red, and even brownish hair, to light yellowish red, with occasionally a small fleck of black on the belly and legs. The darker shades of red are preferred by most breeders, and this type of color is the most desirable. In disposition they are remarkably mild and gentle. When full grown they should dress from four hundred to five hundred pounds, and pigs at nine months old should dress from two hundred and fifty to three hundred pounds.

SELECTION.

No money can be made by selecting a half-wild breed of hogs, nor can success be achieved by selecting a good breed and starving the hogs or allowing them to shift for themselves. Hogs of the improved breeds are not so well able to take care of themselves as those of a half-wild breed, but when well cared for, will pay fifty per cent more profit than the other breed, for the grain fed. This is because they are more quiet and assimilate their food more perfectly.

However good the breed may be, care should be taken in the selecting or coupling of animals, otherwise degeneration of the offspring will result.

In the selection of stock for breeding, look first to the constitutional vigor. Without this, no matter what the beauty of form may be, disaster will come to the herd. Next examine the form, with regard to what you require. Then comes the question of early maturity and easy fattening qualities. In all farm animals tractability and quietness of disposition are essential. In swine this is especially so, as on the disposition of the animal largely depends the quality of fattening quickly and easily.

FEEDING.

The question of feeding swine comes under two heads, viz., that of feeding swine for breeding purposes and feeding for fattening only.

In feeding the breeding animal attention should be given to feeding for a strong constitution, a more active animal, and perfect health. True economy in this will dictate that they have the warmest possible shelter in winter and that they be kept cool in summer, with some place where they can escape from insect enemies. They should have range sufficient for them to exercise their instinct in rooting for such underground vegetation as their nature may require. This promotes health and strengthens their constitution.

These animals which are intended for fattening (and which are the very great per cent of swine in the country), and whose lives do not extend to beyond 15 months at most, are fattened, ready for sale, within ten months, and do not require this range and exercise.

If the breeding stock have been kept healthy they should transmit health to the offspring, giving them a strong constitution on which to build.

The young pigs should be weaned when about six weeks old, allowing them plenty of skimmed milk and buttermilk, mixing at seven or eight weeks old a fair portion of corn-meal mush, or, better still, light wheat and rye screenings ground together. Give them grass also as soon as they will eat it, and at three months old they may be put on clover. In addition to clover, give the young pigs all the milk and other slops of the house, and also give what corn they will eat. The older pigs will do well on clover and corn without the slops. The summer and early fall is the best season for fattening hogs. The gain during this time will be more rapid than at any other season. In the late fall, winter and spring the hogs should be housed in dry, warm sheds or barns.

The fact should never be overlooked that it requires a certain percentage of the food to supply daily animal waste. The young animal converts into flesh more of the food given than a full grown one; no matter how long the animal is kept, the daily waste goes on constantly. True economy is therefore to feed strong from birth and keep them growing as fast as possible. In this way you shorten the feeding period and get them to market quickly. Do not neglect the hogs. Feed them regularly and often enough so that they will not overeat, as this is apt to cause trouble with the hog as with the human being.

Further, see that they have plenty to drink. Neglect to furnish abundance of pure water is a common source of loss and favors the outbreak of disease. Impure and germ laden water invites disease.

Hogs which are being fattened are not given their natural exercise, neither are they at liberty to root in the ground, where they could get the roots and herbs necessary to their digestion. They are, therefore, on account of their confined condition, liable to contract disease. To aid their digestive organs and supply them with the proper ingredients to aid in digesting and assimilating their food, they should be given a small amount of stock tonic each day by mixing Dr. David Roberts' Stok-vigor with ground oil cake, and giving this to them in their feed.

HOW TO GET BEST RESULTS.

The care of young hogs is important in getting the results, and "best results" are what every one is striving for. After you have used care in selecting and feeding your hogs, do not lose the benefit of it by not properly caring for them.

A boar will be ready for service when six or eight months old, but it is better to wait until he is about ten months of age at least. The sow is capable of breeding at seven or eight months old. However, it is better to wait until she is ten or twelve. One litter of pigs per year is enough for the average sow, although some will raise two. If the sow has a warm place for farrowing, the earlier in the season the pigs are produced the greater will be the profit from them.

SPAYING SOWS.

The necessity of castrating the boar pigs, for pork-making purposes, is generally admitted, but the importance of spaying such sow pigs on the farm or in the herd, as are not designed for breeders, has never been appreciated as it should, or as it is likely to be, when the rearing of swine is conducted on such business principles as its importance demands.

The sows that were not intended to be kept as brood sows on the Roberts' Stock Farm, at Racine, Wisconsin, and owned by the father of the writer, were spayed. The writer had a splendid opportunity of watching this little operation, considered so simple, yet requiring a thorough knowledge of the anatomy of the hog, as well as some skill.

Open sows running with other hogs are a source of great annoyance, and where more than two or three are kept, there is scarcely a time when one of their number is not in heat, and continually chasing others, thus keeping them in a worried, fevered condition, extremely detrimental to their growth or fattening.

If all sows are trimmed, this annoyance is avoided, the hogs are quiet and restful, and much time, trouble and feed are saved.

It was very noticeable on the old stock farm that sows thus spayed fed more kindly and profitably than those that were not, and the butchers or buyers preferred spayed sows to barrows, claiming that their meat had a sweeter taste than that of other pigs.

How to Spay Sows.

They should be spayed under six months of age. This requires two attendants; one holding the front feet forward, and the other the hind feet back, placing the sow on her right side. The hair should be shaved off the spot where the incision is to be made (a little back of the last rib, and about midway up and down), then cut a gash about one-half an inch deep and two to three inches long, up and down; slip the flesh back each way about an inch, making a round gash, or wide incision, then turn the knife and stick the blade straight in gently, deep enough to go through the peritoneal lining, or covering of the bowel, at the upper corner of the incision; then put the left fore-finger in, and with the right fore-finger tear the hole large enough to allow working room for the fingers; feel inside near the back of the first two fingers of the left hand for the "ovary," a little knotty lump, which cannot be mistaken, for there are no others like it within reach; but if it is not found, as is sometimes the case, then feel for the tubes or womb, which is called pig-bag. At the end of these tubes are found the ovaries, which can be pinched off with a thumb and finger without much danger of causing any hemmorrhage or permanent injury.

After these have been removed, slack up the upper hind leg, so as to close the gash, and sew up with two or three stitches, taking good hold, but going only skin deep. Apply Healing Oil over the wound, after the stitching has been completed. Healing Oil should also be freely applied to the operator's hand, knife, and seat of operation, to avoid any infection.

CASTRATION.

Pigs should be castrated at from two to three weeks old. Never delay it later than the age of four weeks. This operation should not be performed in cold, damp weather.

Give your hogs the best of care and attention, for without these the finest bred hogs in the land will soon degenerate and become only scrubs.

See Prescription No. 173, *page* 182.

FARROWING.

The sow should have a quiet, dry, warm place and plenty of bedding. Rich food should not be fed for a few days before and after farrowing.

GESTATION.

The average period of gestation in a sow is four months. This varies sometimes several days. Whenever you have a good breeding sow keep her as long as you can, as young sows are often bad mothers. A sow will remain a good breeder for about eight years, unless she becomes overloaded with fat. This should be guarded against.

DISEASES OF SWINE

Diseases of swine are usually classed as infectious and contagious. The infectious form is known as Epizootic Catarrh. The contagious form usually appears as Hog Cholera, Pneumœnteritis.

In the care of swine the *prevention* of disease is of the utmost importance. They are indeed subject to comparatively few ailments; but these few are generally of the most serious kind. In such cases the great difficulty is in administering the medicine, as the animals are usually too sick to take it in their feed. For this reason it is much more important to keep hogs in a healthy condition, and prevent them from having disease than it is to treat them after they have been taken sick.

ABORTION IN SOWS.

Abortion in sows may be divided into two forms, infectious abortion and accidental abortion; either one is a loss and a detriment to the stock owner. It is pretty thoroughly understood that the infectious form is the one which produces the greatest loss. Accidental abortion in sows may be brought on by injuries usually received by sows heavy with pig passing to and from pens or pastures in which there might be sills or boards under gates which they are compelled to either jump over, or drag themselves over, in this heavy pregnant condition. Infectious abortion

may be brought on by breeding sows having a weakened or catarrhal condition of the genital organs to a boar used on all sows. If the boar becomes infected he is then in a condition to infect all sows bred to him.

The treatment for infectious abortion in sows consists in the giving of Breeding Tonic and washing the genital organs of both sow and boar with a solution of Antiseptо. The pens should be thoroughly disinfected with Disinfectall.

See Prescription No. 174, *page* 182.

APOPLEXY OR STAGGERS.

This disease usually afflicts fat hogs, but may attack any hog afflicted with indigestion.

When a hog is thus afflicted the animal acts stupid; the eyes are red; the pulse hard and rapid; and the bowels constipated. As the disease continues the animal may become partly or wholly blind, going around in a circle and striking against objects, and usually falls unconscious. The limbs will stiffen; froth flows from the mouth, and the breathing is hard, with a snoring sound.

The first move to make when a hog is thus taken is to dash cold water over its head and pour a continual stream on the head, and the higher up the pail or dish is held while pouring. the better impression it will have.

An animal should receive a quart or more of warm water injection per rectum, and be given a small dose of Laxotonic, dry on the tongue. The Laxotonic should be continued until the animal's bowels are in a normal condition, at which time the disease will have passed away.

See Prescription No. 199, *page* 182.

CANKER OR SORE MOUTH.

Canker, or sore mouth, in pigs may be brought on by many different causes, such as the result of unhealthy milk from the sow, or from poison on her teats contracted by coming in contact with poisonous vines, or wet grass.

In such an event the sow will have small lumps on the udder and sometimes sores. Next will be noticed blisters on the lips, tongue and mouth of the pigs. The tongue and lips become swollen and the roof and sides of the mouth inflamed and covered with deep red or white blisters.

To overcome this the sow's udder should be washed off with a mild solution of Germ Killer and apply Healing Oil to the udder and teats. If the little pigs do not get enough of the treatment from the udder and teats of the sow, it will be necessary to swab out their mouths with Healing Oil.

See Prescription No. 200, *page* 182.

CATARRHAL FEVER IN HOGS.

The first sign of this disease is usually a discharge from the nose. The inflammation gradually extends to the throat. The animal snuffles and coughs some; the mucous membrane swells and the nose thickens and becomes twisted and distorted and ill shaped and, when exercised a little, the discharge from the nose becomes bloody.

The animal still eats reasonably well, but will not fatten or grow, but gradually dwindles away and will die if not properly treated.

For these cases it is necessary to give Hog Tonic internally and apply White Liniment to the throat from ear to ear. Fever Paste is oftentimes required to overcome their high temperature. The pen should be thoroughly disinfected with Disinfectall, as the fumes of Disinfectall have a tendency to loosen the catarrhal condition of the nose, thereby enabling them to expel this mucous.

See Prescription No. 201, *page* 182.

CONSTIPATION.

If pigs are constipated and no attention given to them, they usually grow worse.

Constipation usually indicates a fever, and if neglected, will soon cause what is known as pile, or eversions of the rectum, which is a very dangerous disease; for if it does not destroy the animal, it will reduce him to a condition that requires destruction. The bowels may become so protruded, ulcerated, and infected as to cause gangrene.

Pigs thus afflicted should be given laxative food consisting of bran and linseed tea. Laxotonic should be given as per direction, warm water injections per rectum, and Badger Balm applied to the protruding bowel.

See Prescription No. 202, page 182.

DIARRHOEA.

Small pigs are frequently taken with diarrhœa, in which case the pens should be disinfected by thoroughly using the Disinfectall, after which Calf Cholera Remedy should be added to a little sweet milk as directed and given them.

See Prescription No. 175, page 182.

HOG CHOLERA.

Hog Cholera, like other diseases, does not always show the same symptoms, or always exist under the same conditions. What may be the most pronounced symptom in one case, may be entirely different in another outbreak of this disease. Such symptoms as diarrhœa or constipation, coughing, redness of the skin of the belly and inside of the thighs, are the general symptoms in Hog Cholera. However, one or more of these symptoms may be partially or entirely lacking in some of the cases.

Certain conditions are usually observed on post mortem examination. The mesenteric glands and intestines are usually congested, ulcers are frequently present in the small intestines, while small red spots may be seen on the surface of the different organs, such as the kidney, liver, or heart.

Hog Cholera is frequently associated with another very fatal disease, known as Swine Plague. This disease seems to invade the lungs to a great extent, while Cholera appears to affect the alimentary canal. The lungs of a hog afflicted with Swine Plague often contain ulcers and congested spots, while the bowels of a hog afflicted with Hog Cholera, as above stated, also contain ulcers and congested spots.

A post mortem examination is often necessary to determine whether the disease be Swine Plague, or Hog Cholera, and while acting in the capacity of Wisconsin State Veterinarian, the writer, in order to determine positively as to which disease existed in a herd, conducted a number of post-mortem examinations. They not only satisfied him, but proved instructive to the live stock owners as well.

Dr. Roberts holding post-mortem on hog which proved to have hog cholera.

Considerable interest has been displayed during the past few years in the Serum Treatment of Hog Cholera, this treatment being intended as a preventive rather than a curative, and for this reason it should be used on healthy hogs in vicinities where Hog Cholera exists.

In order to obtain best results, when Hog Cholera has made its appearance among the hogs, it is advisable to thoroughly disinfect all feeding platforms, pens, and sleeping quarters with a strong solution of Disinfectall. The hogs should be fed sparingly on clean, wholesome feed, with Hog Tonic added to it as per directions. The drinking water should be of the purest, and a little Disinfectall added to it, just enough to give it a bluish color.

If one or more animals are attacked, those apparently well should be removed at once to newly disinfected quarters, and both bunches should receive the best of care and attention, including medicine, wholesome food, and pure water. If any more of them become sick, the hogs which have not as yet shown signs of sickness must again be removed to other pens, and so on, until the disease has been controlled.

See Prescription No. 176, *page* 182.

LICE ON HOGS.

The hogs should be thoroughly washed or dipped in a solution of Disinfectall, as per directions. Older hogs can stand it a little stronger. After they have been thoroughly scrubbed or dipped in this solution, and a few applications of Diolice have been thoroughly sprinkled on them, you will have no further trouble with lice.

See Prescription No. 179, *page* 182.

MANGE.

Mange, scab or itch, in the lower animals is a skin disease of a purely local nature, due to a parasite which produces an irritation, ulceration, and suppuration of the surface of the body, and is oftentimes termed a deep seated skin disease.

It is a contagious disease, never originating spontaneously, and requiring for its development the passage of the parasites or their eggs, from diseased to healthy animals. In man this disease is termed itch; in the lower animals it is usually alluded to as mange, and in sheep it is a well-known destructive disease called scab.

As this disease is due to a parasite which burrows deeply into the skin, it is a hard matter to overcome it without prompt and proper treatment, such as covering the entire body of the pig with soft-soap and leaving it on for a few hours; and washing the entire body with a warm solution of Germ Killer, scrubbing the animal thoroughly at the time of washing.

After the animal has been washed, the Skin Ointment should be thoroughly rubbed into the skin, and especially over the infected parts. This treatment should be repeated several times in the course of ten days, for it is necessary to kill the mites which were in the form of eggs when the first treatment was given. The treatment does not affect the eggs, consequently it is necessary to repeat it a number of times. Hog Tonic should be given as an internal treatment, and the animal should be given good, clean, nutritious feed.

See Prescription No. 203, *page* 182.

MEASLES IN SWINE.

Measles in swine is caused by a parasite called the bladder worm, contracted by eating the eggs from the tape worm of man in its food, just as trichinosis is caused by eating food containing the germs of this parasite.

Dogs oftentimes carry and evacuate the eggs of the tape worm. For this reason care should be taken that swine do not eat this excrement. If the flesh of measly pork is eaten by man without its being thoroughly cooked, he is apt to become infected with a tape worm; hence it is never safe to eat measly pork, since there is always danger that the cyst may escape death in cooking. Measly pork is known by the cysts, some of which are nearly the size of a grain of barley, distributed through the muscular and other tissue.

In the living hog, when infected, there will be found small watery pimples of a pink or red color, just under the skin. There will also be weakness of the hind parts, and general lack of health.

The best method of overcoming this trouble is to use preventives, such as giving the entire herd of hogs regular treatment for worms, as contained in our Worm Powder directions.

See Prescription No. 204, *page* 182.

PARALYSIS.

Paralysis, or partial paralysis of the muscles of the loins or back in pigs is a frequent occurrence, but usually does not seem to interfere with the appetite or general health of the animal.

This condition is sometimes caused by a severe strain of the back, or blows on the back or loins, producing concussion of the spinal cord.

The kidney worm often causes this condition, and for this reason all hogs should be given Worm Powder to rid them of these parasites, as the prevention of this disease will save a great deal of trouble and loss.

If the cause is unknown, a liniment, such as the White Liniment, should be thoroughly rubbed in along the spine. The animal should be given comfortable quarters, with freedom from disturbance by other pigs. They should be fed on sloppy, soft food and sour milk, and if constipated, should be given warm injections per rectum daily, and small doses of Laxotonic as per directions until recovery.

See Prescription No. 205, *page* 182.

QUINSY.

Quinsy, or sore throat in hogs, is of frequent occurrence, rapid in its progress, and usually proves fatal. It is usually confined to fat hogs, or those highly fed.

The first sign of the disease is swelling of the glands under the throat, followed by rapid and difficult breathing and difficult swallowing. When the throat becomes sore and cankered, the tongue protrudes from the mouth and is covered with saliva.

Hogs thus afflicted should be given sloppy food, such as ground oat-meal, corn meal, bran with linseed meal, sufficient to make it slimy. Fever Paste should be administered on the tongue with a spoon, and White Liniment applied to the throat from ear to ear. All abscesses should be opened and washed out with Germ Killer solution.

If the bowels are constipated, small doses of Laxotonic should be administered in the feed and warm water injections per rectum daily.

It is exceedingly dangerous to drench a hog, whether it be afflicted with a sore throat or not. It is safer to give medicine in feed or on the tongue than to drench them.

See Prescription No. 206, *page* 182.

RHEUMATISM.

Hogs afflicted with rheumatism usually act dull and are disinclined to move, and when they do move, they are apt to be lame in one or more limbs, with heat, swelling, or tenderness of a joint or tendon; or a group of muscles may be affected. This form of lameness seems to shift from one joint to another.

In order to overcome this disease it is very important to empty the contents of the bowels. This can be done by giving small doses of Laxotonic as per directions, and warm water injections per rectum. It is sometimes necessary to add castor oil to the feed of pigs thus afflicted, as it has a tendency to soothe as well as to loosen the bowels.

The sleeping quarters for pigs thus afflicted should be dry, warm and airy. They should not be permitted to cuddle together, as by so doing they become hot and sweaty, and later take cold, which has a tendency to bring on rheumatism.

See Prescription No. 207, *page* 182.

THUMPS

Is an ailment due to contraction of the diaphragm and often affects the heart, and is often noticed in pigs which are afflicted with indigestion.

Treatment consists in giving Hog Tonic to overcome indigestion.

See Prescription No. 177, *page* 182.

WORMS.

For worms give Hog Tonic or Worm Powder according to directions.

See Prescription No. 178, *page* 182.

SHEEP

History

Care and Management of Sheep
Selection—Feeding

Breeding Age—Gestation—Coupling—Lambing—Rams
—Castration—Docking—Tagging—Shelter

Prize Winning Lincoln Sheep
Owned by Dr. David Roberts

Diseases of Sheep—Symptoms and Treatment

Miscellaneous Information

History

Domesticated sheep were first introduced on the American continent by Spanish discoverers and conquerors. On the second voyage of Columbus to the new world he brought with him some animals with which to stock the island of Hispaniola; among them were some sheep. His live stock was landed about the middle of December, 1493, at Isabella, where was founded the first Christian city of the new world. The vessels that followed from Spain from time to time brought supplies for the Colonies, including in their cargoes sheep which were landed at Hispaniola and Cuba. From these islands sheep were carried to the Isthmus of Panama.

On Cortes' return from Spain to the City of Mexico in 1530, misunderstandings arose between him and the magistrates, and he left the capital, taking up his residence in the City of Cuernavaca, on the southern slope of the Cordilleras overlooking a wide expanse of country. Here he devoted himself to agriculture and the improvement of his estate. Among other live stock, he imported large numbers of Merino sheep, which flourished and increased rapidly on the abundant pastures in the country around Tehuantepec. From these two localities, Panama and the City of Cuernavaca, went forth sheep in large numbers. From these Spanish sheep originated the immense herds in Mexico, New Mexico, Utah and Texas.

Sheep were introduced into the Eastern States by the early settlers, and much attention was paid to the raising of them. The increase was slow, as there were many difficulties to overcome in caring for them, the principal one being that of protecting the sheep from wolves which abounded in that country in its early settlement. With the approach of the Revolution more attention was paid to the raising of sheep. A feeling of independence was felt throughout the country, and showed itself in the increase of flocks, that the domestic manufacture might be carried on, and there was an increased demand for homespun garments from those who had usually worn the fine products of the British looms. The press of the country urged upon the population the importance of increasing the number of sheep and improving them by selecting the best and disposing of the poorest, and one who continued to wear a coat made of English material was not considered a patriot.

The Revolutionary War caused a backward step in the character of the sheep at that date, and also retarded the increase. As large numbers of the citizens were in the army, the flocks were neglected, and many of the sheep were destroyed by the armies. Upon the close of the war many breeders endeavored to improve their flocks by importations from abroad, as well as by giving those which they still had better care and attention. Much was done toward improving the sheep by better care and attention, but as England was too jealous to permit her improved sheep to be exported for the purpose of improving those of the United States, she passed stringent exportation laws which practically prohibited the exporting of any sheep from England. Although means were found for evading this law, yet the number which the citizens of the United States succeeded in importing was but few, and made but a small impression upon the native flocks.

George Washington, after the close of the Revolutionary War, was the first to improve the breed of his native sheep. He usually kept a flock of from seven to eight hundred sheep, and paid particular attention to their care and breeding, fully realizing that to get the most income from his flock they should be kept up to as high a standard as possible. From the time of the Revolutionary War the sheep industry has gradually increased, though it has often met with reverses of different kinds.

Care and Management of Sheep

Constant attention is necessary in the care and management of sheep. They are timid, without self-reliance, an easy prey to dogs. The necessity of keeping them in large flocks causes them to be especially liable to contagious and epidemic diseases. This care and attention should be given from the time the lamb is born. Often a little attention to a young lamb which is weak will enable it to take on a robust constitution and become one of your best sheep.

BREEDING AGE.

The proper breeding age for sheep is two years, and may continue until ten years old. From the age of three to eight years the best lambs will be produced.

CASTRATION.

Lambs should be castrated at from two to four weeks old.

COUPLING.

November is the season for coupling, but if breeding for mutton or wool, it may be later than this, as the lambs will be better if not dropped until after the time for grass. If the object be to sell lambs, the earlier in the season they are produced the more money they will bring.

DOCKING.

This should be done as soon as they recover from castrating, generally about three or four days afterwards. This should be done with a single stroke of a sharp knife, care being taken to sever the tail at a joint. The skin of the tail should be drawn to the body so that the end will cover the stub. Allow the flock to lie down and keep quiet so that they may lose the least amount of blood possible.

FEEDING.

Sheep eat a variety of vegetation other than the true grasses and will pick a living on pastures where other stock would starve. They can be turned into rough pastures and where brush is growing and will enjoy eating the nutritious shrubs, brush and tufts of grass, in this way helping to clean up the land while getting a good living. The feeding of grain and other feed to sheep should be taken up early enough in the fall so that they will not fall off in flesh before going into winter quarters. A good allowance of corn, oats and bran should be fed, together with plenty of good, clean hay, clover being preferable. There should also be plenty of good, clean water to drink. A trough with medicated salt should be provided so that the sheep may get it at will.

The general diseases of sheep are as follows:

Distemper or Epizootic Catarrh, Indigestion, and Paralysis or Stoppage of the Bowels. These are forms of disease that are the most troublesome, and need the most prompt attention.

GESTATION.

Ewes carry their lambs on an average of 152 days. This time may vary a few days.

LAMBING.

At lambing time the ewe should be provided with warm quarters so that the lamb may dry off and take the teat as soon as possible. Ewes are very apt to become indifferent to a weak lamb.

RAMS.

There should be one ram for each one hundred sheep or less. In the beginning of the season do not let the ram serve more than two or three ewes a day, increasing the number as necessity demands. As the season draws to a close, restrict him again, as an exhausted male cannot get strong offspring.

ONE OF OUR PRIZE-WINNING LINCOLN SHEEP.

Dr. David Roberts Veterinary Company exhibited a bunch of Lincoln Sheep at the following State Fairs: Wisconsin, Illinois, Missouri, Minnesota, Indiana, Iowa and Kentucky, and won 57 (fifty-seven) prizes.

6 Championship prizes,	18 Second prizes,
32 First prizes.	1 Third prize.

SELECTION.

In the selection of sheep for the foundation of a flock the first question to be settled is whether you are going to breed principally for wool or for mutton, and the next is the question of what breed to adopt. In deciding both of these questions your own inclinations should be considered, for you are apt to be more successful when your own inclinations are followed, as more interest will be taken. It is also advisable in deciding these questions to study good authorities on the sheep industry and also to seek the advice of some well posted sheep raiser who has had experience in handling sheep.

After these questions have been settled, the selections of the individuals follow. In this as with other stock, only strong, healthy, vigorous animals should be used for breeding. When you succeed in raising a particularly fine animal, one which shows the best points, keep that animal for your own use in breeding and dispose of some not as good in quality. By following this rule you will soon have a fine flock of vigorous and healthy sheep.

SHELTER.

Sheep barns or sheds need not be expensive structures, as it is only necessary to provide shelter that will keep out wind and water, and at the same time admit of proper ventilation. About three to three and one-half square feet of shed room should be allowed for each sheep. Sheds opening to the south are preferable, as they provide the most protection.

By giving your sheep such care and attention as they need, together with good feed and breeding, they will produce wool and mutton of the best quality, and in large quantities, and be a flock in which their owner will take much pride.

TAGGING.

This is important and should be performed as early in the spring as possible, certainly before the sheep are turned to grass.

DISEASES OF SHEEP

DISTEMPER.

In Distemper, there is a slight watery discharge from the nostrils and eyes—there is a depression and more or less loss of appetite. The breathing is not changed unless the bronchial tubes are affected; the animals seldom cough. At the end of a week, unless the animal gets relief, the discharge from the nostrils becomes thick and pus-like, and sometimes tinged with blood. The eyes are half closed and the lids are gummed with a yellow secretion. There is a loss of appetite, and the animal will die unless promptly treated.

Treatment.

Immediately upon noticing the first animal affected with Distemper, the entire flock should promptly receive Sheep Tonic as a preventive treatment. The Sheep Tonic should be thoroughly mixed with their salt, and placed in a sheltered trough, to which they may have free access. No salt should be given in any other form during the treatment. A solution of Disinfectall (one oz. to a gallon of water) should be used to sponge out their eyes and nostrils. The sheds should be thoroughly disinfected (2 oz. Disinfectall to a gallon of water). Gunny sacks dipped in this solution should be hung around through the sheds, and a sack half full of shavings saturated with Disinfectall (full strength), and hung over the sheep, is of great benefit in such cases.

See Prescription No. 180, *page* 182.

GRUBS IN THE HEAD OF SHEEP.

This is caused by the eggs of the gadfly being deposited in the nostrils of the sheep in July and August. From the nostrils they find their way (in a maggot form) through the sinuses, causing much pain. When the gadflies are seeking the sheep the animals will crowd together with their noses to the ground, stamping violently at times, and will run from one place in the pasture to another. When the maggots reach their resting place they attach themselves by their hooks and are easily dislodged.

Treatment.

Treatment consists of an operation which none but a competent veterinarian should attempt, and as this is not practical excepting upon valuable sheep. For this reason a more simple and cheaper treatment is required, which consists in giving the sheep, which are usually in a nervous, run-down condition, the Sheep Tonic, and the dipping of gunny sacks and hanging them just above the heads of the sheep and thoroughly spraying the sheds with a strong solution of Disinfectall.

See Prescription No. 181, *page* 182.

INDIGESTION.

Give Sheep Tonic according to directions and medicate all salt given.

See Prescription No. 182, *page* 182.

INTESTINAL WORMS.

The presence of intestinal worms is seldom known to the ordinary observer, until after the death of a sheep. They can be detected by a post mortem examination. If worms are found in this one animal, the presumption is good that other sheep are seriously infected.

Treatment.

Mix the Worm Powder thoroughly, according to directions, with their salt, and place in sheltered troughs where they may have free access to same. They should not receive salt in any other form.

See Prescription No. 183, *page* 182.

LUNG WORMS.

These worms are usually found in wind-pipe, or bronchial tube, and sometimes in the lungs. They are small, thread-like, and long.

There will be a husky cough, rapid breathing, loss of appetite and flesh. The sheep will rub their noses on the ground. There may be dysentery, with a bad smelling odor.

Treatment.

Give the Worm Powder according to directions, in the salt or in a little feed. Disinfect the sheep pens thoroughly with a strong solution of Disinfectall (2 oz. to a gallon of water). Gunny sacks dipped in the same solution should be hung around the pens, and a half sack of shavings saturated with Disinfectall (full strength) should be hung around at different points, over the sheep. The breathing of this medicated air destroys the worms. The sheep should receive good, nutritious feed, both during and after the treatment.

See Prescription No. 184, *page* 182.

DR. DAVID ROBERTS ON THE USE OF MEDICATED SALT IN PREVENTING LIVE STOCK DISEASES.

Every animal must have, and will consume if permitted, a reasonable amount of salt, either daily or at frequent intervals, as nature demands.

When we stop and consider that all domestic animals are kept under artificial conditions to a certain extent, depriving them of an opportunity of using their wild animal instinct, which in itself would protect them in a large measure from many of the diseases they are now heir to, we can readily understand that when they are deprived of this liberty they are more susceptible to disease.

The bison, the wild horse, the Rocky Mountain sheep, and the wild boar require no special care in preventing or overcoming disease. They find their own preventives and curatives in the native wilds.

Owing to the fact that our domestic or farm animals are deprived of this opportunity, we must, in order to obtain the best results, supply them with such ingredients as they would obtain had they been given their freedom.

It is for this reason that I have prepared a MEDICATED SALT which contains roots, barks and herbs, and when placed where our domestic animals may have free access to it daily, prevents disease and loss to an unlimited extent.

MEDICATED SALT aids digestion and assimilation, prevents fermentation, is healing and soothing to the mucous membrane of the digestive organs; at the same time it has a tendency to destroy, stupefy, and expel worms of all description, thereby enabling the animal to derive a greater benefit from the food which it consumes, thus developing into a strong, healthy, vigorous, profitable animal.

PRICES OF MEDICATED SALT.

Put up in 100 pound bags.

100 lbs. .....$ 5.00 500 lbs. $23.00

F. O. B. Waukesha, Wis.

How to Make Your Own Stock Tonic at Home

By DR. DAVID ROBERTS
Cattle Specialist

The Originator of Condensed Stock Tonic.

IMPORTANCE OF HEALTHY STOCK.

It is a well-known fact that successful stock raising and dairying depend entirely upon the health and condition of your animals. If they be in a strong, healthy condition this is evidence that they are digesting and assimilating all the feed that they consume. A milch cow requires a certain percentage of the feed she eats to sustain her, the balance should go to the milk pail. This will be the case if she is in a good, healthy condition and digesting and assimilating her feed.

NATURE'S CARE OF THE COW.

A cow at pasture depends entirely upon nature to supply and regulate her feed, and it is during this season of the year that she produces the greatest amount of milk. This is because she is furnished with such ingredients as are required by nature to perfectly digest and assimilate her feed. She can only receive the feed that nature has provided for her, in its natural condition, during the grass season.

COW UNDERGOES GREAT CHANGE.

At the close of the grass season the cow is compelled to go into winter quarters, thereby undergoing a great change as to sunlight, fresh air, water, exercise and feed. While being in her winter quarters she is to a certain extent deprived of sunlight, and sometimes fresh air. She is usually watered at stated intervals. While at pasture she can partake of water in such quantity and at such times as she desires, the temperature of which is regulated by nature. This is a great advantage over the ice cold water which she is often compelled to drink, or go without until the following day, at which time she is so thirsty that she is apt to partake so freely of it as to cause a chilling of the digestive organs, thus causing indigestion. Another common cause of indigestion is the lack of exercise. During the winter months, while a cow is shut in the stable so much of the time, it is impossible for her to get the exercise which it is her nature to have and which she gets during the summer months, while going to and from and roaming in the pasture hunting her feed. The last and most important cause of indigestion is the great and complete change that the cow is compelled to undergo, when required to change from the feed which nature provides in its natural form to the dry, fibrous and hard to digest fodders, which it is necessary that she be fed upon, not only to sustain her, but also to make a profit for her owner.

A WINTER PROFIT PRODUCER.

If a cow during the winter months can be made a profit producer, it can only be done by furnishing her with something to stimulate her digestive organs and keep them in a healthy condition, so that she may thoroughly digest and assimilate the feed that she eats. This can be done by adding to her regular ration such ingredients as she may need to tone up her system and thereby furnish her with a substitute for nature. A cow can produce more by receiving little feed and digesting it well, then by receiving much feed and only digesting part of it.

MAKE YOUR OWN STOCK TONIC.

A good Stock Tonic can be prepared at home at very small cost and fed to a herd so that the saving of feed will pay for the Stock Tonic, and the increase in milk and the health of the herd will be clear gain, the latter being a very essential and important thing to consider. If this alone was the only benefit derived by feeding the Stock Tonic, it would be considered a good investment. This Stock Tonic is not only a bone and muscle builder, a flesh and milk producer, but is also valuable as a health preserver and a preventive of disease.

ONE DISEASED COW ENDANGERS THE WHOLE HERD.

It is a well-known fact that a cow in a run-down condition is a hotbed for the germs of disease to infest and multiply in, thereby not only becoming a dead loss to the owner, but endangering the health of the whole herd. From this source many infectious diseases originate in herds and in this manner cause great loss to the owner.

A COW'S YEARS OF USEFULNESS PROLONGED.

Every dairyman owes it to himself to see that his cows are kept up to the highest point of productiveness. He should not be satisfied with the amount of milk that he is getting from a cow until he knows that she cannot be made to give any more. A cow can be kept up to her highest point of productiveness for many years, provided she digests and assimilates her food; on the other hand, when she fails to properly digest and assimilate her food her years of usefulness are very much shortened. A cow is similar to a machine, the more you feed the more she produces, the better care she receives, the longer she lasts—this Tonic to a cow is as oil to a machine. Therefore, when you have a good cow, why not take proper care of her and make her last for years in service, instead of neglecting her and thereby shortening her period of usefulness, making it necessary to replace her with another cow which you are not sure is going to be a profit producer? In replacing a neglected cow which might otherwise be good for many years, you not only risk getting a profit producer, but you are also taking chances on introducing into your herd, with every cow you buy, diseases which might cause you great loss.

DISPOSE OF NON-PROFIT PRODUCERS.

If you have a number of cows in your herd which have passed the years of usefulness, dispose of them and give the balance of your herd the attention necessary to enable them to give the richest, highest test and largest flow of milk that it is possible for them to produce.

In disposing of the cows in your herd that have proved themselves to be non-profit producers and those that have passed their years of usefulness, and bringing the balance of your herd up to the highest degree of productiveness, you are getting and saving all the profits from your herd, instead of putting part of the profit back in feeding and caring for the cows that have proved themselves to be non-profit producers. A few cows well kept are more profitable than a larger number poorly kept.

QUICK MONEY IN BEEF.

Beef cattle should be given such attention as to cause them to fatten quickly, shorten the feeding period and produce the highest and best grade of beef that is possible to be produced. To obtain these results, the best of attention should be given to them and such ingredients added to their feed as to cause perfect digestion and assimilation, thus enabling the animal to obtain a larger per cent of flesh and fat-forming elements from a certain amount of grain.

HEALTHY INDIVIDUALS.

To be successful in the breeding of cattle, and especially show cattle, much attention should be given them in order to produce strong, robust, healthy, superior individuals. In order to expect this, the calf from the moment that it drops should receive proper care and such food as will be digested and assimilated so as not to overtax the digestive organs. To avoid this, such ingredients should be added to the feed as will aid digestion and assimilation, thus causing rapid development of bone and muscle, and resulting in a perfect animal.

PROFIT SAVED.

While the use of unadulterated Stock Tonic is beneficial to your herd, you can save money by making it yourself, and by doing so you will also be sure of its absolute purity.

WHERE YOUR PROFITS GO.

All the bulky portions of Stock Tonic are products of the farm. You raise these products and sell them to your buyer; he in turn sells them to the large grain dealer at a profit. The large grain dealer sells to the buyers for the different mills at a profit. In these mills your products are ground up, sold and shipped to the Stock Tonic factories at a profit, where it is medicated, put up in packages and pails and labeled Stock Tonic. It is then sold to the wholesaler at a profit. The wholesaler sells to the retailer at a profit, and you buy from the retailer, paying him a profit. You, being the consumer, must pay all these different profits, together with all freight charges. These freight charges, where the goods are shipped so many times, amount to considerable, for each time that the goods change hands a new freight charge is made and they are most all made for short hauls, and you well know that a number of short haul charges amount to more than one single long haul.

HOW TO SAVE YOUR PROFIT.

You can save the middleman's profit and the freight charges from one dealer to another on your products and back to the farm, by buying your ground flaxseed or ground oil cake, from your home dealer in such quantities as to assure you of getting it at a reasonable price; or better still, buy or raise your own flaxseed and grind it yourself if you have a mill; if not, have it ground at your nearest home mill. You are then sure of getting the very best and purest ground flaxseed meal that can be had. When ground flaxseed is too high priced, use ground oil cake or you can use any kind of ground feed. By adding to this flaxseed meal or ground oil cake such roots, barks, herbs and seeds as nature demands for stock, you have a complete and perfect mixture in the form of a pure Stock Tonic. By feeding this Stock Tonic to your cattle in small quantities with their regular feed you will keep their digestive organs in good condition, so that they can thoroughly digest and assimilate their feed, which will enable them to produce you a profit and also to keep in a sleek, healthy condition. This, when fed to a milch cow, will cause her to yield the richest and greatest flow of milk that it is possible for her to give.

When given to beef cattle with proper feed it will enable them to obtain a larger percentage of flesh and fat-forming elements from a certain amount of grain, causing them to fatten quickly, thus shortening the feeding period and producing the highest and best quality of beef possible to be produced.

If you are in the breeding business, not only the prices which you can demand, but also your sales depend upon the strong, robust and healthy appearance of your stock.

HOW TO MAKE YOUR OWN STOCK TONIC AT HOME.

To prepare your own Stock Tonic at home, it is only necessary for you to have the medical parts (such as powdered roots, barks, herbs and seeds), to mix with the ground flaxseed or oil cake meal. These powders we can furnish you at the lowest cost and with a perfect guarantee of purity.

We buy our roots, barks, herbs and seeds direct from the drug mills in large quantities, thereby getting the very lowest prices possible. They are shipped direct to our factory under a positive guarantee that they are absolutely pure. They are then carefully and scientifically mixed and placed in sealed cans, the contents of which we guarantee to be absolutely pure. This is the Stokvigor, by the use of which you are enabled to make an absolutely pure Stock Tonic.

DIRECTIONS FOR MAKING YOUR OWN STOCK TONIC.

Dr. David Roberts' Stokvigor, 2 pounds;
Ground Flaxseed or Oil Cake Meal, 25 pounds.
Stokvigor 12 pound can; ground Flaxseed or Oil Cake Meal, 150 pounds.

Place such amount of Ground Flaxseed or Oil Cake Meal as you wish to use in large shallow box 4x4 ft. square and 1 ft. deep, spread over it the Stokvigor, in the proportion of 2 pounds to each 25 pounds of Ground Flaxseed or Oil Cake Meal. Then with a hoe or shovel turn back and forth five or six times, or until the Stokvigor is thoroughly mixed in.

DIRECTIONS FOR FEEDING YOUR OWN STOCK TONIC.

For milch cows—Give two tablespoonfuls twice daily in feed of any kind.

For fattening steers or show cattle—Give two or three tablespoonfuls twice daily in feed.

For raising or fattening calves—Two teaspoonfuls twice daily in feed or milk.

For horses—Give two tablespoonfuls twice daily in feed of any kind.

For brood mares—Give two or three tablespoonfuls twice daily in feed.

For colts—Give one or two tablespoonfuls twice daily in feed.

For hogs—For every pig of 50 pounds or less give one teaspoonful twice daily in feed or milk. For hogs over that weight give one tablespoonful twice daily in feed.

For brood sows, suckling pigs—Give two tablespoonfuls twice daily in feed.

For sheep—Give two tablespoonfuls twice daily in feed.

For fattening sheep—Give two tablespoonfuls twice daily in feed.

This Stock Tonic will aid digestion, increase the flow of milk, save milk in raising calves, keep hogs healthy and fatten them quickly, sleeken and fatten horses. It is a bone and muscle builder and for this reason all young stock as well as matured animals should receive it.

Calves and pigs receiving skim or separator milk should be given this Stock Tonic, as it aids digestion and prevents scours. Medicate all salt given to stock.

Two pounds of Condensed Stock Tonic mixed thoroughly with 25 pounds of salt and put in troughs in a sheltered place where the cows can have free access to it in passing to and from the pasture will keep them in a healthy condition.

This stock tonic is prepared especially for cattle, but has been used with such good results on other stock that we do not hesitate to recommend its use for all animals.

SUCCESSFUL STOCKMEN HIGHLY ENDORSE DR. DAVID ROBERTS' STOKVIGOR.

Stockmen everywhere are warm in their praise of Dr. David Roberts' Condensed Stock Tonic, which not only has the advantage of greater economy than Stock Tonics of large bulk, but is backed by the reputation of one of the greatest living veterinarians, under whose personal direction it is prepared.

"YOU HAVE STRUCK THE KEYNOTE."

Dr. David Roberts, Waukesha, Wis.

Dear Sir:—I have used your Stokvigor with highly satisfactory results. Think you have struck the keynote, as there is no chance for adulteration where a stockman buys the ingredients of a stock tonic and mixes them himself.

Yours truly,

F. W. HARDING.

WISCONSIN INDUSTRIAL SCHOOL MAKES TEST—GIVES STRONG ENDORSEMENT.

We gave your Stock Tonic a fair trial on all our horses and half of our herd of Holstein cows, and the difference between those receiving the tonic and those not receiving it was very marked, the former being very sleek and thrifty. After this experiment we feel we cannot speak too highly of your tonic, and take pleasure in recommending it to all in need of a first-class stock tonic.

WISCONSIN INDUSTRIAL SCHOOL.
Per K. C. Dousman, Supt. Stock Dept., Waukesha.

DROPS ALL OTHER FOODS AND USES DR. DAVID ROBERTS' STOKVIGOR.

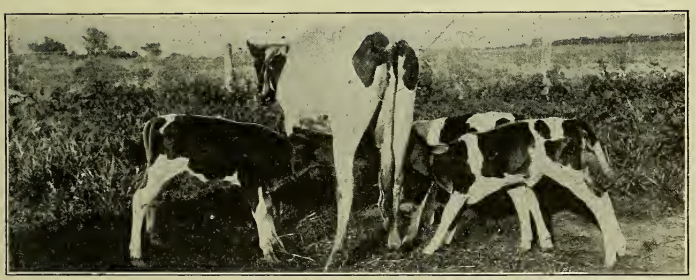
Dr. David Roberts, Waukesha, Wis. MONROE, IOWA.

DEAR SIR:—Enclosed find draft for which please ship to Prairie City, by freight, one dozen packages of your Stokvigor.

After giving your tonic several tests I am ready to recommend it to others. I have used stock tonic at different times for the past eight years and some of the best I could get, but I must admit I got much the best results from yours. I am feeding nine calves on separator milk and adding your Stock Tonic, and they are doing fine, as good as some that are sucking the cow and no stock tonic.

I have fed it to fattening hogs, to sows and to pigs with excellent results, better than anything I ever tried. I also had a chance to give it a severe test on my horses, especially on our family horse. She got in bad shape, coat of hair was rough, and she was not doing well. I fed her two different makes of stock tonic at different times, but did not help her. Last spring I fed yours to all my horses, her with the rest, and it caused her to shed off and get a nice coat of hair, and get fat so that several of the neighbors mentioned to me how well she was doing now. I used the oil meal to mix with it to save expenses. I also mixed your tonic with salt and fed it to my cattle when I turned them out on pure clover pasture that had a good growth and not one bloated. I shall drop all other tonics and use yours. Truly yours, C. FAIRNEY.

A PICTURE AND LETTER SENT ME BY ONE OF OUR THOUSANDS OF SATISFIED CUSTOMERS.



Dr. David Roberts, Waukesha, Wis. Lawrence, Kans., Dec. 16, 1910.

Dear Doctor: We have mailed you a photograph of one of our Holstein cows and three large, strong, healthy calves.

This Cow, with the balance of the herd, received your treatment for abortion and we thought that this photograph would be the best evidence of results.

We are getting calves by the carload again and they are strong and healthy.

Respectfully, F. D. Wiggins & Sons.

POULTRY

Care and Management of Poultry on the Farm

Feeding For Eggs

For Fattening Poultry

Diseases of Poultry—Symptoms and Treatment

Valuable Poultry Pointers

Care and Management of Poultry on the Farm.

I fear that the poultry end of the farming business is very much neglected. The hen on the farm has been considered a necessary evil, left to forage for herself and lay a few eggs in the season when prices are lowest. In cold weather it is more work to care for the chickens, and with no winter eggs forthcoming, they are considered unprofitable. During the hatching season it is believed that about so many chickens die anyway, whether they have good care or not.

This is a great mistake. There is no question that farmers can make more money out of poultry than the person who is raising poultry on a small place. Many waste products of the farm can be turned into profit by marketing poultry and eggs. It is an occupation in which the farmer's wife can share. For this reason it behooves the farmer, or his wife, to give the matter of poultry raising most careful thought and attention. Modern methods and experiments have proven that with proper care, administered with a liberal amount of common sense, the rate of loss among chicks is very small, while the profits are greatly increased.

Poultry raising on the farm is becoming of more and more importance. The farmer is learning that it is good business policy to secure and keep pure bred fowls. A great many farmers have already started to raise pure bred cattle and hogs, and well bred horses. If it is policy to secure cattle with high records, why not keep pure bred fowls from a good laying strain and add to the income from this source? It costs no more to maintain a flock of high-grade poultry than it does one of mongrels, yet the increase in market value, whether of eggs for hatching, or meat for table use, more than compensates for the original high cost of securing pure bred fowls.

To realize the most profit from poultry on the farm, a breed of fowls should be selected that are rustlers, that will go out into the yards and field and pick up at least a part of their living during the summer months. Besides being good layers, they should have a good market value after their usefulness as egg producers has passed. The different varieties of Plymouth Rocks, Orpingtons, Wyandottes or Rhode Island Reds are among the general purpose fowls. If good breeding stock is made the basis of the flock, and they receive the proper care, the egg basket will be well filled, and the poultry department pay a good profit both summer and winter.

POULTRY HOUSES.

The two main factors in the successful raising of poultry are proper housing and proper feeding. Of these, perhaps, the most important is the housing. The comfort, health, and productiveness of the fowls depend almost entirely upon housing. Dry, well ventilated houses, with plenty of light and sunshine, are necessary if the best results are desired. More diseases and losses are brought about by dampness, filth, and foul air, than by any other cause. Poultry will withstand severe cold much better than they will warm, poison-laden air, hence good ventilation is necessary. A house situated where it gets but little sunlight is unfit for poultry. Without sunshine, young chicks will make but a sickly growth and the older stock will soon degenerate. The cloth front houses are fast becoming popular among the best poultry raisers. This style of house gives plenty of fresh air without the drafts that are so dangerous to fowls.

The poultry house should be placed on ground that is always well drained and a sandy soil is preferable. Low, ill-drained clay soil, where water stands on the surface, attracts filth and causes disease. It makes a poor footing and consequently harder work while tending the flock. On the higher, well drained ground, it is far less difficult to keep the house dry and clean. We prefer a location with a gentle slope to the south or southeast. It is desirable that the building be exposed to the sunlight as long as possible on winter days and at the same time be sheltered from the cold north wind.

The amount of floor space allowed for each fowl depends upon the breed, the style of house, and the amount of confinement. Large hens require more space than small ones. Fowls that are confined a great part of the time, need more floor space than those that have free range. Ordinarily for hens of medium size, in flocks of twelve or more, three to six square feet of floor space per hen is suf-

ficient; but if fewer than this, the space should be greater proportionately. The house should be high enough to accommodate those working in it, but no higher, as additional height increases the cost and makes the regulation of temperature more difficult. If possible, build a scratching shed in connection with your poultry house. Make this with open front, covered with poultry netting and curtain of muslin or burlap, to let down in stormy weather. Such a shed allows much more floor space and permits the building of smaller roosting and nesting quarters at less expense. A house 12 feet wide by 20 feet long would be suitable for a flock of 50 fowls of the larger breed, or for 60 or 70 fowls of the smaller varieties. Much floor space can be gained by placing dropping boards under the roosts. These should be 8 or 10 inches from the roosts and ought to be cleaned at least once a week or oftener.

The most suitable material for roosts are 2 by 2, or 2 by 4 timbers, with the uppermost corners slightly rounded. These should be made removable to facilitate cleaning. Fowls of the larger breed require 7 to 9 inches space on roost, the smaller ones require from 6 to 7 inches. The nests should be darkened as the hens naturally seek a secluded place in which to lay their eggs. A good place for the nests is under the front of the roosting platform, the entrance to the nests in the rear, with a board on hinges to give access from the front to gather the eggs and clean out the nests. The nests should be 12 to 14 inches square and of about the same height. The inside of the house, roosts, nests and other fixtures will be kept sweeter and cleaner if they are thoroughly whitewashed at least twice a year. Mix a liberal amount of Disinfectall with the whitewash and you will be but little troubled with mites and lice. The main thing in housing poultry is to give them plenty of room. Overcrowding leads to disease, and disease cuts down the profits.

BREEDING FOR VIGOROUS LAYING STOCK.

The main thing, after selecting the breed you like best, is to secure good breeding stock with exceptional vigor and vitality. It is impossible to raise healthy, lively chicks, that will develop into strong, vigorous fowls unless you have the vigorous foundation stock to breed from. You must have vitality whether your fowls are bred for market purposes or for eggs. You cannot expect a profit from weak and sickly birds.

A common mistake among poultry raisers, and especially among farmers, is to use eggs for hatching collected from the whole flock. The chances are that a few of the eggs are from the best hens, but the majority of the chicks will be poorer stock and will not help to build up the flock. The proper way is to separate a few of the best hens from the remainder of the flock, mate them with a good, vigorous male bird and use only the eggs from this pen for hatching. In this way you know just what your breeders are and will make more improvement in your flock in one year than you will the other way in three.

It is a good plan, in order to maintain the vigor and other good qualities of your flock to introduce new blood occasionally. This may be done by purchasing new male birds each year or every second year, or you may buy eggs from some reliable poultry raiser and select the best stock hatched from these eggs for next season's breeding. In either case be careful that you get equally as good or better stock than you already have. In buying new birds it is well to get them early enough to become accustomed to their new surrounding before the breeding season begins.

The selection of new stock is important and requires some knowledge of the qualifications of poultry in general. One must consider the appearance, the shape, size, and color. He must consider the condition of the fowl, whether it is healthy and full of life and vigor, or whether it is weak and sickly. In purchasing birds for the improvement of your laying stock its past performance is most important. Be sure that it is stock from a strain of fowls that has produced winter eggs.

In mating up your fowls for breeding, the age of the stock must be considered. Mating immature birds on both sides is rarely productive of strong chicks and generally means many chicks dead in the shell. Birds must be full grown and well matured before they are in a fit condition to reproduce themselves. Eggs from older hens are better for hatching than those from pullets. The usual and probably the best method is to mate a good vigorous cockerel with two-year-old hens or a

strong cock bird with pullets. The number of hens to one male bird depends largely on the condition of the male and whether or not his attentions are well distributed. A safe rule may be from six to a dozen, but good results have been obtained with as many as thirty hens to one male, but in such cases the vitality of the chicks is sure to be lowered.

INCUBATION.

Where poultry is raised on an extensive scale, incubators and brooders are a necessity, since hens cannot be depended on to become broody in sufficient numbers and at the right time to furnish the early hatched chicks so necessary to the large poultry plant. But to the farmer who raises but a hundred chickens or less, the natural means of hatching is preferable. For those who prefer to use incubators, it is always best to follow closely the rules laid down by the maker of the incubator. He knows best just what his particular machine will do and just how it should be run. The same may also be said of brooders.

As a general rule, hen-hatched chicks are more vigorous than those hatched in incubators. Especially is this true where the farmer or his wife has not sufficient time to give proper attention to the incubator, or to properly look after the chicks when raised in a brooder. The hen knows better than the average farmer how to care for her little ones. If the farmer would spend as much time in caring for his setting hens and their chicks as he would with an incubator and brooder, he would probably have as many chickens in the fall, and they would be stronger and more vigorous than if he had hatched them by artificial means.

If convenient, set several hens at the same time and when the hatch comes off, give all the chicks to as few hens as can conveniently care for them. Break up the other hens and get them to laying again as soon as possible. The setting hens should be in a secluded place by themselves. The constant noise and disturbance made by the rest of the flock is apt to break up their setting and cause them to leave the eggs before they are hatched. Very often a hen will get discouraged and leave the nest two or three days before it is time for the hatch. Do not throw them away. Keep them in a warm place by the stove and in nine cases out of ten the heat generated by the eggs, or rather the chicks themselves, will complete the hatch and all be good and lively.

The setting hens and their nests must be kept perfectly free from mites and lice. Nothing will discourage a setting hen quicker than the constant irritation caused by lice. Use Diolice freely on the hens and nests up to the third or fourth day before the hatch is to come off. Give the hens access to a good dust bath. Place plenty of fresh water, grit, and oyster shells where they can help themselves at will.

About the tenth day it is a good plan to test the eggs. Very often enough clear eggs may be taken out so that the remaining eggs may be set under fewer hens. In this case, one or more of the hens can be broken up and put with the laying stock. Egg testers may be bought of incubator manufacturers or poultry supply dealers. A good home-made tester can be made in a few minutes by using an ordinary pasteboard shoe box, set on end. Place a small lamp inside and put the cover on. Cut a hole in the top for ventilation, and on the side opposite the cover cut a hole, just a trifle higher than the flame of the lamp, about the size of a silver half dollar. Darken the room when testing. Place the egg over the hole and turn slowly. If the egg is opaque, except the air space, it is fertile. If it is clear it is not fertile and should be thrown out. The clear eggs may be saved and boiled for feed for the little chicks.

FEEDING FOR RESULTS.

Feeding poultry of any kind is a problem of great importance. While a scientific knowledge of the balance ration is not necessary, the fundamentals of correct feeding should be understood. The question is what to feed, how much and when. Fowls in a wild state live mostly on green food, bugs and worms, during the breeding season, thus getting the necessary rations for egg production. We want our hens to produce eggs the year round, if possible, therefore we must feed an egg producing ration and surround them with the proper environments. The three essentials are grain foods, animal foods and succulent green foods. If these three varieties are placed in sufficient quantities before the fowls, they will balance

their own ration and supply their own needs according to their individual requirements. Overfeeding is more harmful than underfeeding. It tends towards fatness and laziness, and a lazy hen is not a laying hen, hence the necessity of feeding the proper amount in such a manner as to give the necessary exercise. Exercise is necessary to keep poultry in good condition. When fowls are confined, all grain food should be scattered in six inches or more of straw, leaves or some other similar litter. Of course, this is not so necessary for fowls that have free range.

There are so many different methods of feeding poultry, varying with the variety of fowls, the climatic conditions surrounding them, and the purpose for which they are fed, that it is impossible to describe them all here, but a few suggestions may be helpful.

FEEDING CHICKS.

Do not feed young chicks for twenty-four hours after they are hatched. The first thing that chicks will look for is grit. Be sure to supply them with coarse sand or fine grit, for without this they cannot readily digest their food. Their first feed should consist of hard boiled eggs chopped fine and dry bread crumbs, to which a small amount of Dr. David Roberts' Poultry Tonic should be added. This acts as a tonic and helps to assimilate and digest the food, thus warding off indigestion and bowel trouble, which carry off 75 per cent of the chicks that die under two weeks of age. This food should be fed for two days; then for eight or ten weeks practice this system of feeding: In the morning feed mash composed of the following ingredients, in the proportion given:

Wheat Bran	5 lbs.
Oatmeal	2 lbs.
Unbolted Cornmeal	3 lbs.
Middlings	2 lbs.
Beef Scraps	4 lbs.
Crushed Oyster Shell	½ lb.
Dr. David Roberts' Poultry Tonic	1 lb.

Mix with warm milk or water to a crumbly mass, not sloppy. Allow to stand at least fifteen minutes in a closed vessel or covered with a cloth, carpet, sack, or something similar. Feed just what they pick up clean without stuffing themselves. One of the best indications whether or not you are feeding the correct amount is the fact that when the chicks are through their morning mash, they should at once start in quest of insects, bugs, etc.; but if overfed, they will sit around all drawn up as is usually the case from a derangement of their digestive organs.

At noon, feed hulled or pinhead oats. In the evening, feed small wheat, or in place of the grains here mentioned, you may feed any of the commercial chick feeds which may be obtained of your grocer or feed store. Scatter this feed in fine litter of some kind and see how greedily they will search for it even when but two or three days old. In feeding young chicks always keep in mind that they need coarse sand or grit of some kind. If this system of feeding is kept up until the tenth week, you can feed chicks just the same as adult birds, and you should raise 90 per cent of those you hatch.

FEED FOR GROWING AND LAYING STOCK.

The feed for growing stock and the feed for laying stock should be practically the same. In both cases food is needed for building new material, for keeping the body warm and for replenishing the energy used in every movement. The elements required for those purposes are found in the nearly right proportion in the ordinary grains, such as corn, wheat, and oats. The amount of benefit derived from these grains in feeding poultry will depend on the skill of the one who selects and mixes them. Growing and laying stock need more of the foods that are rich in protein and carbohydrates than of those that are rich in fat. A good balanced ration for layers is the following in the proportions given:

Wheat	50 lbs.
Oats	15 lbs.
Wheat Bran	10 lbs.
Beef Scrap	5 lbs.
Dr. Roberts' Poultry Tonic	½ lb.

Scatter the wheat and oats in the litter as a scratch food. Mix the bran, beef scrap and Tonic, and feed dry in a hopper. Supply the necessary green food, grit, oyster shells and plenty of pure water. In very cold weather add 20 lbs. of whole cracked corn to the scratching food. The smaller breeds can stand more corn than the larger varieties, because they are more active and use up more energy. Corn tends to fatten the larger fowls unless they are made to exercise a great deal.

The question of feeding mashes, whether wet or dry, is one on which many poultrymen differ. Some get better results from the wet mash, others get better results from the dry mash. We prefer using both methods. A variety gives relish to the food. The more the fowls relish their food the more good will they get from it. A hot or warm mash, wet just enough with water or milk to make it crumbly, makes a good morning feed three or four times a week. When milk is fed to the chickens less beef scrap or ground bone will be required. Milk, either sweet or sour, is an excellent food for poultry. When fed in large quantities the flesh of the fowl is much whiter and more tender. For this reason there is a demand for milk-fed poultry, and a better price may be obtained. Dr. David Roberts' Calf Meal is a good substitute for milk, as it contains the same elements. It may be profitably fed to poultry instead of milk and the same results be obtained at less cost.

The following makes a good dry mash mixture for laying hens:

Wheat middlings	6 parts.
Wheat Bran	4 parts.
Corn Meal	4 parts.
Beef Scrap	4 parts.
Oil Meal	1 part.
Alfalfa Meal	1 part.
Dr. Roberts' Poultry Tonic	1 part.

Feed this mixture in a hopper, giving the fowls access to it in the afternoon only. If they have it in the morning they are apt to fill up on the mash and not get the exercise they need and obtain by scratching over the litter in quest of the whole grains.

GRIT, CHARCOAL, AND OYSTER SHELLS.

Very often the cause of failure in the poultry business may be traced to an insufficient supply of one or all of the following essentials in the poultry yard. All fowls, large and small, young and old, must have grit of some kind. They cannot grind their food without it, and their food must be ground up or it will not digest. A large percentage of bowel trouble in fowls can be traced to the lack or scarcity of grit. Do not make the common mistake of thinking that the fowls will find a sufficient quantity by themselves. With a flock of hens or ducks ranging constantly over the same ground day after day, every pebble is soon picked up and the supply of grit is exhausted. Even when the fowls have free range, a box or hopper should be kept well supplied with grit of some kind and placed where the fowls can help themselves at will. The importance of this cannot be too strongly impressed on the mind of the poultryman.

Oyster shells are too soft to serve as grit. While they are a necessary part of the ration, supplying the elements for building bone and shell, they cannot take the place of grit. Cut clover is rich in lime and is a good food for producing egg shells, but granulated bone or oyster shells should be kept in boxes or hoppers so the fowls can supply their needs.

Charcoal is an excellent aid to digestion and a good blood purifier. It may be fed in a granulated form in hoppers, or it may be powdered and fed in the mash. It will prevent many of the bowel disorders and is a valuable corrective of these troubles. Charcoal will readily absorb gases and impurities. This is one reason why it is such a valuable article of diet for the poultry. If it is the least bit damp it ought to be placed in a hot oven and thoroughly dried out before feeding.

A plentiful supply of clean, fresh water is important. Laying stock especially needs lots of water. In ordinary circumstances a laying hen will drink nearly half a pint of water in a day. The drinking utensils must be kept scrupulously clean to prevent diseases and infection. They should be thoroughly scalded out at least once a week or oftener. The drinking water, if neglected, may be a great source of contagion. The watery discharge from a roupy fowl dropping in the drinking

water will infect the whole flock. For this reason a sick fowl should be kept entirely away from the remainder of the flock. In cold weather the water should be warmed enough to take the chill off, and if cold enough to freeze, see that fresh water is given twice or three times during the day.

SUCCULENT GREEN FOOD.

Every variety of poultry requires green food of some kind. This is as much a necessary part of their ration as hay is to horse or cow. They must have it all the year round in some form or other to insure the best results. There are various ways and methods of supplying this need. Garden vegetables, such as cabbages, carrots, or mangels, are good. In feeding turnips, beets, or mangels, or other large roots, cut them in half and lay them with the flat side up and the chicken will pick them out clean. Or drive a spike or two through boards two or three feet long, fasten them to the wall of the coop and stick the roots on these. This is a cleaner method than leaving them on the floor. Smaller vegetables, such as carrots, potatoes, etc., may be chopped fine or boiled and fed in the mash.

One of the best green foods is sprouted oats, especially in winter time, when other fresh green stuff is hard to obtain. Soak the oats in warm water about ten hours, or over night. Drain off the water, but leave the oats in a deep pail or box, well drained; sprinkle daily until they begin to start roots. As soon as the roots start, put the oats in shallow boxes to a depth of about three inches. These boxes should have holes in the bottom to let the water drain off, but the oats must be wet daily to keep them growing. In a very few days sprouts will start and the feed is ready for the chickens. Sprinkle a little salt on them to make them a little more appetizing, and the chickens will leave all other food for the oats. The resulting increase in egg production more than pays for the trouble of sprouting the oats.

In the summer time, where the fowls are confined and do not have access to grass or other green stuff, a parcel of ground in the yard may be spaded up and oats sown. Soak them in warm water about ten hours and sow very thick. They will soon sprout and the chicks will scratch them out, getting green food and exercise at the same time.

Corn silage is excellent as a green food for poultry. They will quickly clean up every bit but the cobs and joints of the stalks that do not get broken up. This makes a cheap green food on the dairy farm where silos are in use.

FATTENING FOR MARKET.

Before marketing fowls of any kind it is advisable and profitable to separate them from the rest of the flock and give special feed until they are in a suitable condition for the table. It takes but little to fatten poultry, and a much higher price can be obtained for birds thus conditioned than for the ordinary run of fowls marketed without this finishing touch.

To fatten a fowl, food is required that is rich in carbohydrates and fat, rather than being rich in protein, as these elements are converted into fat whenever the fowl is fed more than enough to keep it warm and keep it strong enough to perform the work it has to do. Give all feed in troughs in order to keep the fattening stock inactive as much as possible, so the food consumed will develop fat instead of bone and muscle.

For the first day or two feed a little less than they will eat up clean. This will make their appetites keen for the forcing feed that is to follow. The addition of Poultry Tonic to the ration will also have the effect of sharpening the appetite and more benefit will be gained from the food consumed. A good ration for fattening may be made up of equal parts of wheat bran, corn meal, and cut clover, or alfalfa. To every four quarts of the mash add a tablespoonful of Poultry Tonic. Dampen slightly with water or milk and feed once a day as a mash, preferably in the morning. At noon feed any kind of meat scrap, or table scraps, that you may have, together with equal parts of wheat and cracked corn. The night feed should be mostly of corn. Be sure there is no food left over from one feeding to another. The sight of food before them all the time is apt to spoil their appetites so they will not relish the fresh supply as they should. If you have no clover, or alfalfa meal, feed any other green stuff that you may have. Green food is necessary since the

forcing ration is too much concentrated for the fowl's digestive organs unless they have exercise. An abundance of good, sharp grit must be supplied. The large amount of food consumed requires good grinding material to aid digestion. It is also necessary that plenty of clean, fresh water be kept before them all the time.

STANDARD WEIGHT.

	Cock lbs.	Cockerel lbs.	Hen lbs.	Pullet lbs.
Light Brahma	12	10	9½	8
Dark Brahma and All Cochins	11	9	8½	7
Langshan	10	8	7	6
Javas and Plymouth Rocks	9½	8	7½	6½
All Wyandottes	8½	7½	6½	5½
American Dominique	8	7	6	5
Orpingtons	10	8½	8	7
Minorcas and Spanish	8	6½	6½	5½
Andalusians	6	5	5	4
Rhode Island Reds	8½	7½	6½	5

SELECTION OF BREEDS.

For meat: Brahma, Cochins and Langshans.

For general purpose: (Meat and eggs combined.) Plymouth Rock, Wyandottes, Rhode Island Reds and Orpingtons.

For eggs: Leghorns, Minorcas, Hamburgs or any of the smaller active breeds.

DUCKS ON THE FARM.

The raising of ducks and geese on the farm is a part of the industry that is not appreciated as it should be. There are thousands of farms all over the country which could be made more profitable by raising flocks of well-bred ducks or geese. To a certain extent ducks are more profitable than chickens. They are easier to raise, are less subject to disease, and take but little room. They are not unlike hens in one respect—a few pay better proportionately than many.

A duck of the improved breeds will lay from 120 to 160 eggs in a year and usually begins in February. They are more profitable when sold as soon as they reach four or five pounds in weight. After that, feed that is given to ducks that are to be marketed is practically thrown away, as they gain but little in weight. The growth of the duck is more rapid than that of any other fowl known, thus making a broiler early in the season when prices are high. The feathers are always in demand. They can be plucked every six or eight weeks from those ducks that are carried beyond the broiler age.

Ducks are never troubled with mites or lice unless they are housed with chickens or turkeys. They do not thrive if housed with other poultry. They do not have the same digestive apparatus as chickens, consequently the manner of feeding is different. Ducks require at least two-thirds of their diet in a wet, mash form, while chickens do better on a larger amount of dry grains—hence the difficulty of housing and feeding both kinds of fowls together.

While ducks take naturally to water, they should have dry quarters and dry bedding at night. The most frequent cause of disease among ducks is filth and dampness. They are naturally more filthy than chickens, hence the necessity of keeping their house well supplied with clean, dry litter. Ducks rarely lay in nests, but prefer the floor, and in order to keep the eggs clean, the straw must be kept fresh and clean. They generally lay before eight o'clock in the morning, consequently it is better to keep them shut in until this time in order to get the eggs and prevent their stealing their nests.

In mating, one drake to six ducks is about the right proportion. Select breeding stock that has lots of vigor and vitality. The ducks that are used for breeding purposes should have free access to some pond or stream of water. Swimming in water is to a duck what scratching is to the hen. It is their exercise, and exercise is necessary to give fertility to the eggs and vigor to the young ducklings.

The feed for young ducks differs somewhat from that for little chickens in that ducks require more wet food, a good quantity of green stuff, and more animal

food of some kind. They can eat much more and grow much faster than chicks. Like chickens they should not be fed until the second day after they are hatched. The first two or three days' feed may consist of hard-boiled eggs and dry bread crumbs broken up fine, to which should be added a small amount of coarse sand for grit. A good mixture for feeding after the third or fourth day may be made of six parts of corn meal, six parts wheat middlings, and one part of beef scrap or blood meal. To this add a small portion of Dr. David Roberts' Poultry Tonic to aid in its digestion. Wet this mixture to a crumbly mass and feed all they will eat. The green food may consist of any kind of succulent vegetable, chopped up fine, grass clippings, or even weeds of a juicy character. I have known a flock of ducklings to grow and thrive on no other food but chopped weeds, mixed up with a little bran or corn meal, and an occasional feed of dry cracked corn. Of course, they had the run of the yard and picked up an occasional bug, or worm, which supplied their need of animal food.

After the ducks are three or four weeks old, cracked corn and whole wheat may be given, but it must first be well soaked. If convenient give them all the milk they can drink. The pan or trough used for watering should be deep enough for the ducks to dip their bills into above the nostrils. Unless they can do this their nostrils get clogged and the ducks are apt to suffer in consequence. Give them all the fresh, clean water they want, but not enough to swim in. Although ducks are water fowls, they will quickly die if they get thoroughly wet before their plumage gets heavy enough to protect them. During the first week or two, grit should be added to their mash feed in the form of fine gravel or coarse sand. After this age they will pick it up themselves if kept in sufficient quantities where they can get it easily. They also need cracked oyster shells and charcoal kept before them all the time to get the best results.

For laying and breeding ducks the following mash food is good:

Wheat Bran	10 parts
Corn Meal	10 parts
Ground Oats	8 parts
Cut Clover or Alfalfa Meal	6 parts
Grit	2 parts
Dr. Roberts' Poultry Tonic	2 parts

Mix with about four parts of boiled turnips or other vegetables and feed all they will eat twice a day. At noon give whole corn and oats. For green stuff, follow the suggestions as given for chickens on page 162.

Ducks that are well taken care of are very seldom sick. They get colds and lameness from sleeping in damp quarters. In case of cold, remove the cause by putting clean, dry bedding in their house. If the cold is severe, causing a frothy scum over the eyes, treat the same as for roup in chickens.

Ducks and geese are very hardy and you may depend on it that they will live and grow, even with very little attention, after the first few weeks, providing they have the proper kind and the proper amount of food.

PROFIT IN GEESE.

Geese are about the easiest fowls to raise on the farm, since they require but little care after they are four weeks old. They are grass eating fowls, and will thrive and grow on less grain than any other variety of poultry. They are hardier than other fowls, consequently do not require such comfortable quarters; a low shed for protection in stormy weather is sufficient. Low, marshy ground, suitable only for water fowls, can be profitably utilized by raising geese, providing they have a dry place to sleep in.

In mating, one gander with from one to four geese is the rule. Breeding stock at pasture need but little attention. Those kept in confinement must be provided with plenty of green food, rather than too much grain. Do not let them get too fat. After a goose has laid nine or ten eggs she will become broody and want to set. Break her up as you would a hen and she will soon start to lay again. After she has laid the third lot of eggs in this way, it is a good plan to let her set. The first eggs may be hatched under hens. The time for incubation is from thirty to thirty-two days. After the fifteenth day it is a good plan to moisten the eggs occasionally so the young goslings will be better able to break through the shell.

In caring for and feeding the young goslings, the suggestions given for ducks may be followed. Keep them warm and quiet until the second day and do not let them get damp or chilled. They require but little care and attention and as soon as they are strong enough, give them the run of the farm.

TURKEYS NEED MORE ATTENTION.

It is generally considered difficult to raise turkeys successfully, but this is partly due to improper care and attention during the first few weeks. Very many failures in turkey raising may be traced to the poor selection of breeding stock. Many diseases and losses among turkeys, more than in other poultry, is caused by lack of vigor in the old birds. Inbreeding and breeding from immature birds, or from run down stock, is sure to cause disaster. It is almost necessary to secure a new tom, entirely unrelated, each year. Do not depend on exchange of toms with turkey raisers in the neighborhood, especially if such exchanges have been made previously. It is better to purchase of some remote dealer so there may be no possibility of relationship. Vermin, filth, and dampness are often causes of loss among turkeys. The remedy is obvious. Keep them dry, clean, and free from lice.

Breeding stock should be well matured. Turkey hens, two years old or more, are to be preferred. Be sure that both male and female are healthy and vigorous. The breeders should be separated from the rest of the flock and kept well fed but not over-fat. Being of roving nature, it is advisable to give them as wide a range as possible in order to give them exercise and at the same time allow them to pick up a large part of their feed. Provide nests in a secluded place. A good place for turkeys may be made by placing a barrel on its side and putting straw inside for the nest. Partly cover the barrel with brush or other material so it will be almost hidden.

You may raise a few turkeys by hatching under a chicken hen, but the turkey mother is much more successful and is also cheaper, for she will take the young poults out on foraging expeditions so they secure the greatest part of their living from the fields; while otherwise they would have to be fed nearly all they would get. The time required for hatching is twenty-eight days. Let the turkey hen alone until she brings the brood from the nest.

The young turkeys should not eat until they are thirty-six hours old. The first two days' food may consist of hard-boiled eggs and stale bread crumbs. After that for three or four weeks, feed stale bread moistened with milk, with the milk pressed out so the bread will crumble. After two weeks mix a little Poultry Tonic with the bread crumbs. Do not allow them to get damp or chilled in the morning, and keep fresh, clean water and grit where they can help themselves any time. As soon as they are strong enough to run with the mother they may have the run of the farm. Feed turkeys almost entirely on dry grains and green stuff as they do not thrive on mash foods.

The profit in turkeys comes from raising as many as possible and having them ready for the Thanksgiving market. According to the U. S. census, there were nearly three millions fewer turkeys in 1910 than there were in 1900, or a decrease of nearly half. In view of the terrific loss in numbers of turkeys, their increasing scarcity has boomed the price until they are now a luxury. This surely means money to the successful raiser of turkeys.

POULTRY DISEASES

BRONCHIAL ROUP.

Take a tail or wing feather, strip the web from it excepting just at the point. Dip feather into some Poultry Roup Paste, insert feather into the treachea (wind pipe) and give a quick turn. This is a delicate operation, but if you are careful there is no danger.

See Prescription No. 186, *page* 183.

CATARRHAL OR DIPHTHERIC ROUP.

Make a solution of one teaspoonful of Disinfectall to a quart of water, and wash head, eyes, nostrils and throat thoroughly. Then apply Poultry Roup Paste by rubbing some into nostrils, over head and comb, and well into the mouth. Feed nourishing soft food, reduce corn and increase meat foods. In order to effect a permanent cure, one must use a good tonic in connection with the above treatment. The best tonic extant is made by taking equal parts of wheat flour and Poultry Tonic, mixing same with just enough water so you can form it into pills about size of a large pea, and administer one or two of these pills three times a day until a cure is effected.

See Prescription No. 185, *page* 183.

CANKER.

Associated with Roup, the symptoms being similar and the treatment the same.

Symptoms.

A cheesy matter collects on the tongue, roof of the mouth and around the opening of the windpipe. Fowl usually breathe with mouth open.

Treatment.

Apply Disinfectall direct to the canker with a small brush or feather. Feed same as for Roup.

See Prescription No. 187, *page* 183.

CHICKEN POX.

Caused by neglect or improper feed.

Symptoms.

Small bunches of hard substances appear just under the skin on the comb, face and wattle, and in a short time they exude a liquid matter which dries and gives the head a scabby or scaly appearance.

Treatment.

Feed same as for Roup. Wash affected parts with a solution of one part of Disinfectall to nine parts of warm water, dry with a cloth and apply Poultry Roup Paste.

See Prescription No. 188, *page* 183.

CHOLERA.

This disease is quite prevalent among poultry, although many other diseases are diagnosed as cholera. Sometimes filth is the cause of this disease, which is contagious and oftentimes spreads rapidly through the flock. If a bird is suffering from the advanced stages of cholera, it is wise to kill it and burn the carcass.

Symptoms.

The first symptom is a watery discharge from bowels, lacking in color as the hours go by. The bird sits around with its feathers ruffled, head and neck drawn up close to the body, eyes closed, is very feverish and thirsty. It is inclined to remain standing just where it is. As the disease increases in violence the discharge increases, and the ability of the bird to move decreases.

Treatment.

Put one tablespoonfud of Poultry Cholera Medicine to every quart of mash, feed twice a day until all symptoms of the disease disappear. If the fowl is unable to eat, make pills of the Cholera Medicine by dampening it and administering one every four hours until a cure is effected. Follow up after a cure is effected by using Poultry Tonic in the feed.

See Prescription No. 189, *page* 183.

CROP BOUND.

Impaction of the crop is a condition known to many poultrymen. This is caused by the retention and swelling of grain, by the accumulation of dead gases or by some obstruction of the outlet of the crop. It is also caused by poor digestion, and occasionally a bird has had a fast, then when allowed all it will eat it stuffs its crop to the utmost capacity.

Symptoms.

Swell crop. Fowl stretches its neck occasionally as though choked or trying to swallow.

Treatment.

Take ordinary baking soda (saleratus), dissolve a tablespoonful in one pint of warm rain water, flush crop by pouring the water down the fowl's throat. Knead crop gently between thumb and finger until the mass is broken up. Tie fowl by feet, lay its head downward, hold mouth open, work crop gently, and in this manner the crop may be emptied. In extreme cases, the knife must be resorted to, and when this is done the incision should be as high up as possible. After the mass is taken out, the opening should be sewed. Feed nothing but soft feed for eight or ten days, and a mixture of Poultry Tonic. It is a rare case when the fowl dies from the operation.

See Prescription No. 190, *page* 183.

DIARRHOEA

In chickens and adult fowls is caused from too coarse food, filthy water, improper temperature, etc.

Symptoms.

Discharge or looseness of the bowels.

Treatment.

Use Poultry Cholera Medicine as prescribed for Cholera, using half the amount for chicks.

See Prescription No. 191, *page* 183.

GAPES.

This is a parasitic disease prevalent among chicks. The worm that causes the disease is hatched from an egg containing embryo, and they attach themselves to the lining of the windpipe. They live and flourish until they become so numerous as to choke the chick, if nothing is done to hinder their progress.

Treatment.

The chicks go around with their mouths open, gasping for breath and making a gasping noise. Feed Poultry Tonic to your chicks and keep them free from lice, and they will never have Gapes. In case the chicks already have them, use the same treatment as for Bronchial Roup.

See Prescription No. 192, *page* 183.

LEG WEAKNESS.

Caused from in-breeding, lack of nourishing food, overcrowding, damp quarters and sometimes from too wide a perch to roost upon.

Symptoms.

Unsteady gait. Bird will attempt to walk and topple over, either forward or backward, and in advance stages is wholly unable to walk. The feet and legs become feverish and dry.

Treatment.

Rub legs with Oil of Camphor and add fifteen grains of Iodide of Potassium to every quart of drinking water. Feed nourishing food, containing double the amount of Poultry Tonic that is usually given.

See Prescription No. 193, *page* 183.

LICE.

These pests are the cause of more deaths among poultry than any disease. In fact, they are the cause of many of the diseases and ailments among poultry. One must wage a constant war against vermin to keep the fowls free from them.

To keep the fowls free from vermin the following method should be used: To every gallon of whitewash add one-fourth pint of Disinfectall. Whitewash inside of poultry house and nests. Use Disinfectall in its purity on the roosts and dropping boards. Apply same with a paint brush or spray pump. Dust the poultry thoroughly with Louse Powder, and the most effective way of doing this, if you have no machine, is to place fowls' legs between your knees, the head toward your body, raise the feathers with your left hand and dust the powder with right, being careful that the powder gets to the skin.

To keep the air pure and healthful in your poultry house all the time, fill a burlap bag with shavings or excelsior thoroughly saturated with Disinfectall and hang the same in poultry house.

See Prescription No. 194, *page* 183.

MOULTING.

This is not a disease, but may be touched on just here. This change takes place once a year and if properly cared for, poultry will begin to moult in late summer. Then by early winter they will be through, and will have their entire coat of new feathers, and be ready to start in on their winter lay of eggs. This is a vital period for the hen, and it is important that she should be fed Poultry Tonic, as there is nothing better to aid in the growing of new feathers.

See Prescription No. 195, *page* 183.

PIP.

Caused by the fowl being in a feverish condition.

Symptoms.

The tongue becomes very dry and parched, the point of it becoming almost like horn.

Treatment.

Give fowl two drop dose of tincture of aconite every two hours until the sixth dose has been given. Use same treatment in connection as prescribed for Diphtheric Roup.

See Prescription No. 196, *page* 183.

ROUP.

This is a disease that comes from sudden changes of the weather or may be due to birds being exposed to drafts. It may be the result of hereditary tendencies, overcrowding, contagion, filth, etc.

There are several forms of Roup, known as Catarrhal, Diphtheric, Cankerous, Bronchial and Pulmonic.

Symptoms.

Sneezing, discharge of the nostrils, difficult breathing, wheezing, rattling in the throat. Any one or several of these symptoms may be present, accompanied by a bad odor about the nostrils or mouth. Fowls thus affected want to sleep most of the time with the heads under the wings.

Treatment.

Apply Roup Paste three times daily to nostrils, head, comb and wattles and place a little of it in the mouth and throat by the use of a stiff feather. Better results can be obtained if head is washed and throat swabbed with a mild solution of Disinfectall. If there be a canker use Disinfectall full strength. When canker is killed remove with a flat stick and then apply the Poultry Roup Paste.

Preventive.

All birds affected as above should be separated from the rest of the flock and the premises should be given a thorough cleaning and disinfecting. Especially should the drinking vessels and feed troughs be carefully attended to. To prevent the spread of the disease, use a teaspoonful of Disinfectall to every gallon of drinking water, also use Poultry Tonic, giving twice the amount prescribed for ordinary use.

See Prescription No. 197, *page* 183.

SCALY LEGS

Caused from a small parasite propagated by filth, burrowing under the scales on the legs.

Symptoms.

Legs are very rough and unsightly.

Treatment.

Apply kerosene to the affected parts, then anoint with Badger Balm.

WORMS.

There are more than a dozen different kinds of worms that infest domestic fowls, yet there are but three that are common enough to warrant suggesting means of getting rid of them. They are the tape-worm, round-worm and pin-worm. The tape-worms are jointed, the same as are found in man, only much smaller. They have small hooks arranged so that they cling to the wall of the bowels and thus subsist on the nourishing elements of the food found there. Round-worms take their name from their appearance. They are seldom passed in the droppings. They multiply very rapidly and are often present in great numbers. Pin or thread worms are very small, being about the size of a thread, white in color, and from one-half to one inch in length. These are quite often found in the gizzard, having eaten through the lining and into the gizzard proper.

Symptoms.

Symptoms of the different worms are essentially the same. Indigestion, sometimes accompanied by looseness of the bowels. Fowls sit around, draw up, feathers ruffled, comb becomes pale, fowl feverish. The surest sign is where the fowl "goes light," i. e., eats well but seems to gain no weight, and in fact decreases in weight all the time.

Treatment.

Let the birds fast for twenty-four hours, then feed a bran mash twice a day, to which has been added some Worm Powder for Poultry. Use one tablespoonful to twenty-five head of poultry.

As a preventive, use one-half of the amount once every two weeks.

In extreme cases, coop the bird and do not feed it for twenty-four hours. Make a pill about the size of a pea from Worm Powder, and give to the fowl. Give light feed of bran mash, and in three hours give the bird a teaspoonful of Epsom Salts dissolved in water.

See Prescription No. 198, *page* 183.

POULTRY NOTES.

The time to prepare your hens for winter laying is all the time. Don't wait until the price of eggs is at its height in the winter before you begin to give the laying stock the proper care and feed. Keep them in good condition all the year around. Select the hens for breeding purposes early and do not force them for winter egg production. Save this vitality for the hatching season and get better hatches and more vigorous chicks.

Hatch your young stock in March and April. They will then be ready to lay by October and November and keep it up all winter, if they receive the proper

care and feed. From the best laying pullets select the hens for next season's breeding and mark them with leg bands. In this way you will build up your flock for winter egg production.

When the fowls are confined have a shallow box filled with road dust in which has been mixed a small amount of Diolice. Place the box where it will be in the sunshine as much as possible. This dust bath is a luxury for the hens and helps to rid them of lice and other vermin.

In considering poultry for profit one must not overlook the value of the manure as a fertilizer. It should not be used as a top dressing, but mixed with soil and applied principally to garden crops. It is worth from two to three times as much as common barnyard manure.

Hens that are over-fat are not good layers. Feed less corn and wheat and more green stuff. Make them exercise as much as possible.

An excellent way to feed oats is to let them soak over night, then boil until they are soft. Add a little bran or a portion of the mash mixture until it forms a crumbly mass. Feed while it is warm, and on a cold morning this mixture will be greatly relished by the fowls.

Make a careful study of your birds and care for them according to their individual needs. All fowls are not alike. Some need more attention than others.

Any disturbance among the hens that causes any degree of fright will noticably affect the egg yield for a time. Be very careful that no strange persons or animals cause any excitement among the laying hens.

If you are troubled with hawks getting the little chickens, try raising a few guineas. Being of a wild nature they are constantly on the alert and will quickly give the alarm when they see a hawk or some strange animal approaching. Chickens and other fowls soon learn the signal and waste no time in seeking a place of safety. Guineas are very industrious and will pick up nearly their whole living, if given the run of the farm. They have never had much reputation as a table fowl, but on account of the gamey flavor of their flesh, they are fast becoming a favorite dish on the tables of first-class hotels and restaurants. This increasing demand for the guinea will add another source of profit to the farmer.

A hen will not lay eggs if she is constantly tormented with lice or mites. Give your laying hens access to a good dust bath. Keep the roosts and walls sweet and clean with whitewash. Spray occasionally with Disinfectall and do not neglect to dust the hens once in a while with Diolice. Fight the vermin and keep the hens as comfortable as possible.

In order to make the most profit from your poultry you must get the highest prices possible for the products, and at the same time keep the cost of production as low as possible. Every effort made in increasing the output of your poultry yard, and every convenience added to make the work easier and more efficient, is adding that much more to the value of the farm.

Should the reader of this book fail to understand any of the descriptions or recommendations herein, or be unable to make application of them, if he will write the author for further information, it will be promptly given.

Do not experiment with your live stock ailments. Obtain the best and most reliable veterinary medicines and give them strictly according to directions. You will not only save time and money, but your animals.

It is better to profit from the experience of others than to meet your losses when trouble overtakes you.

There is a great difference between what a man knows, and what he thinks he knows. You should know how to treat your live stock; if not, write

Dr. David Roberts, 500 Grand Ave., Waukesha, Wis.

A. J. Frame, Pres't.
D. Merton Frame, Vice Pres't.
G. H. Bishop, Vice Pres't.
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The Waukesha National Bank.

Waukesha, Wis. Nov. 20th., 1903.

Dr. D. Roberts,

City.

You ask if you can rafer to this Bank in placing before the public your Veterinary Remedies.

Most certainly you can. One who can concoct remedies which evidently give great relief to the distressed dumb animal, is entitled to be called a benefactor.

Your testimonials, which I have seen, from stock raisers, not only in the United States, but from Europe as well, are conclusive evidence as to the value of your remedies.

Your record and manly efforts command approbation. If this short letter is of any service to you, then use it.

Sincerely yours,

A. J. Frame, President

He who will not profit by the experience of others gets knowledge when trouble overtakes him.

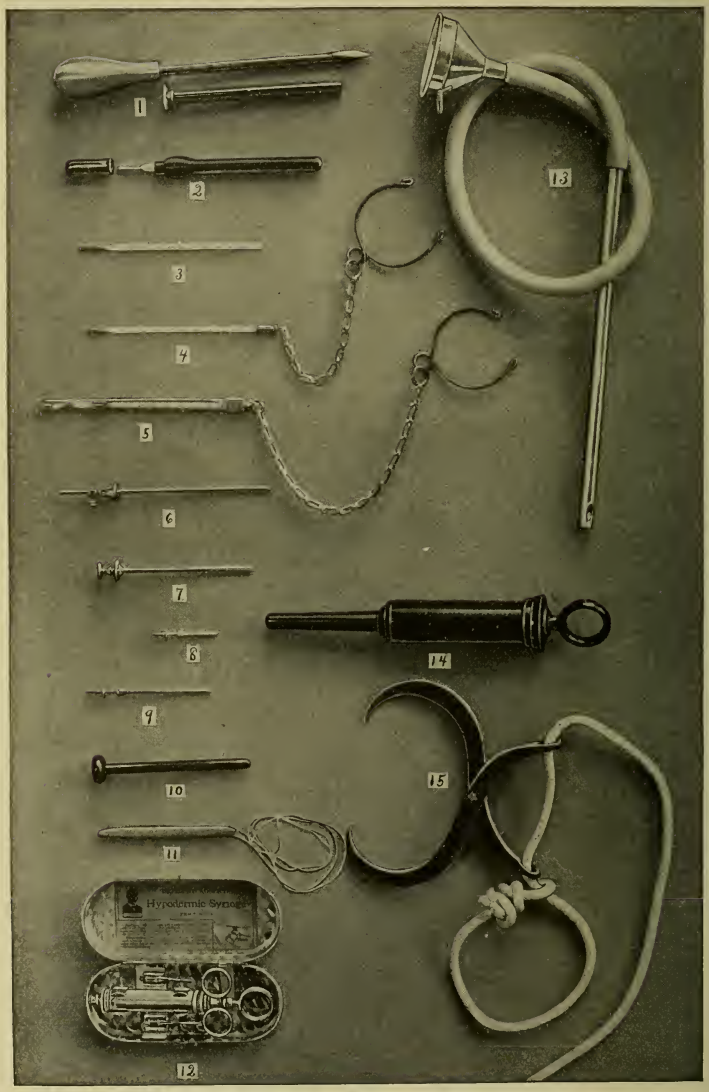
It is never too late to make a start in the right direction. Keep your stock in a healthy, profitable condition.

You are at liberty to write me at any time about the care and treatment of Live Stock and I will give you my best thought.

Dr. David Roberts, Waukesha, Wis., 500 Grand Ave.

NOTICE.

We have no objection to live-stock journals or individuals quoting this book, providing always that they give due credit to the author.



See Price List on opposite page

IN CONCLUSION.

We desire to emphasize in the strongest possible terms our desire to be of practical assistance to the owners and breeders of Live Stock.

We will consider it a privilege to answer by personal correspondence any questions relating to the care and management of Cattle, Horses, Swine, Sheep and Poultry. Dr. David Roberts himself will reply to all inquiries regarding diseases of live stock and their treatment.

We guarantee the genuineness of every testimonial appearing in this book.

In all cases where it is desired that Dr. David Roberts visit the herd, we will be pleased to arrange for such a visit, to any point in the United States or Canada, as soon as his other professional engagements will permit.

It is impossible to cover in this condensed treatise all of the diseases of live stock. To do this would require many volumes.

No matter from what disease your stock may suffer, if you will write us fully regarding same, Dr. David Roberts will write you personally, advising you as to the proper treatment and the method of administering same.

In a word, the aim of this company is to render valuable service to owners and breeders of live stock everywhere.

We desire to thank our friends for their patronage and generous indorsement of our medicines and other products, and to extend to them our sincerest good wishes for their continued prosperity and success in raising the standard of their flocks and herds.

Faithfully yours,
DR. DAVID ROBERTS' VETERINARY CO.,
500 Grand Avenue,
Waukesha, Wis., U. S. A.

HOW TO ORDER.

Purchase medicines from our dealer in your town. If no dealer and you have no order sheet, write plainly the name of medicine wanted and make remittance either by Post Office Order, Express Order or Bank Draft on Chicago or New York to Dr. David Roberts Veterinary Co., Waukesha, Wis., U. S. A.

Remittance must accompany order, otherwise medicine will be sent C. O. D.

PRICE LIST OF INSTRUMENTS.

1	Cattle Trocar	$1.50
2	Fever Thermometer (with rubber case)	1.00
3	Fever Thermometer (plain)	.75
4	Fever Thermometer (with chain and Tail clasp)	1.25
5	Fever Thermometer (in metal case with chain and tail clasp)	1.50
6	Teat Bistoury	1.50
7	Teat Expander	1.50
8	Teat Plug (Aluminum)	.25
8	Teat Plug (rubber)	.50
9	Milking Tubes, Metal	$0.35
9	Milking Tubes, Hard Rubber	.50
10	Womb Sound (Hard Rubber)	1.00
11	Womb Dilator	1.00
12	Hypodermic Syringe	2.50
13	Flushing Outfit	1.00
13	Flushing Tube only	.50
13	Funnel and Rubber Tube	.50
14	2 oz. Hard Rubber Syringe (with special tube)	1.25
14	1 oz. Hard Rubber Syringe	.75
15	Drenching Hook with Cord	1.00

PRESCRIPTIONS

CATTLE

ABORTION IN CATTLE.
℞ No. 1.
Anti-Abortion
Hypodermic Syringe
Antisepto
Disinfectall
Flushing Outfit

AFTERBIRTH—RETENTION PREVENTIVE.
℞ No. 2.
Breeding Tonic

AFTERBIRTH RETAINED.
℞ No. 3.
Cow Cleaner
Antisepto

ABCESS.
℞ No. 4.
Antiseptic Poultice
Germ Killer
Absorbent
Healing Lotion

ANTHRAX.
℞ No. 5.
Anthrax Vaccine

APPETITE DEPRAVED.
℞ No. 6.
Cow Tonic
Stokvigor

BARRENNESS.
℞ No. 7.
Breeding Tonic
Antisepto
Flushing Outfit
Womb Sound
Womb Dilator

BLOATING.
℞ No. 8.
Laxotonic

BLACK LEG.
℞ No. 9.
Black Leg Vaccine

BLOOD POISONING.
℞ No. 10.
Germ Killer
Fever Paste
Absorbent

BOILS.
℞ No. 11.
Antiseptic Poultice
Absorbent

BRONCHITIS.
℞ No. 12.
Fever Paste
Laxotonic
Cow Tonic
White Liniment

CALF CHOLERA.
℞ No. 13.
Calf Cholera Remedy
Laxotonic
Disinfectall

CALF INDIGESTION.
℞ No. 14.
Laxotonic
Calf Cholera Remedy

CONSTIPATION IN CALVES.
℞ No. 15.
Castor Oil
Laxotonic

CALVING.
℞ No. 16.
Laxotonic
Umbilicure

CLEANING.
℞ No. 17.
Cow Cleaner
Antisepto

CASTING THE WITHERS.
℞ No. 18.
Antisepto
Laxotonic
Cow Tonic

CASTRATING.
℞ No. 19.
Germ Killer
Healing Oil

CATARRHAL FEVER OR PINK EYE.
℞ No. 20.
Antisepto
Eye Lotion
Fever Paste
Cow Tonic
Disinfectall

CHOKING.
℞ No. 21.
Half Pint Raw Linseed Oil
Laxotonic

COLD.
℞ No. 22.
White Liniment
Fever Paste
Laxotonic

COLIC OR CRAMPS.
℞ No. 23.
Colic Drench
Laxotonic

CONSTIPATION OR STOPPAGE OF THE BOWELS IN CATTLE.
℞ No. 24.
Laxotonic

COW POX.
℞ No. 25.
Cow Tonic
Badger Balm
Germ Killer
Absorbent

DEHORNING.
℞ No. 26.
Horn Killer
or
Dehorning Clipper
Healing Oil

DIARRHOEA IN CATTLE.
℞ No. 27.
Cow Tonic
Calf Cholera Remedy

EYE DISEASE.
℞ No. 28.
Antisepto
Eye Lotion
Stokvigor

FEVERS.
℞ No. 29.
Fever Thermometer
Fever Paste
Laxotonic
White Liniment

FISTULA.
℞ No. 30.
Germ Killer
Absorbent
Healing Lotion
Cow Tonic

FOOT DISEASE OR SORE FEET IN CATTLE.
℞ No. 31.
Germ Killer
Healing Lotion
Absorbent
Antiseptic Poultice
Cow Tonic

FOUNDER.
℞ No. 32.
Laxotonic
Fever Paste
Antiseptic Poultice

FROST BITES.
℞ No. 33.
Germ Killer
Badger Balm

GARGET-CAKED UDDER OR INFECTIOUS MAMMITIS.
℞ No. 34.
Cow Tonic
Badger Balm
White Liniment
(In severe cases use in addition.)
Antiseptic Poultice
Germ Killer
Disinfectall

GENITAL DISEASE.
℞ No. 35.
Breeding Tonic
Antisepto

GONORRHOEA IN BULLS.
℞ No. 36.
Antisepto
Breeding Tonic

GRASS STAGGERS.
℞ No. 37.
Laxotonic

GRUBS OR WARBLES IN SKIN OF CATTLE.
℞ No. 38.
Healing Oil

HAIR BALLS.
℞ No. 208.
Medicated Salt

HARD MILKERS.
℞ No. 39.
Teat Plug
Germ Killer
Badger Balm

INDIGESTION.
℞ No. 40.
Cow Tonic
Laxotonic

INFLAMMATION OF THE LUNGS.
℞ No. 41.
Fever Paste
White Liniment
Laxotonic

INFLAMMATION OF THE WOMB.
℞ No. 42.
Fever Paste
Antisepto
Laxotonic

INFLAMMATION OF THE UDDER.
℞ No. 43.
Cow Tonic
Germ Killer
Badger Balm
White Liniment
Antiseptic Poultice

INFLAMMATION OF THE TESTICLES.
℞ No. 44.
Germ Killer
Badger Balm
Antiseptic Poultice
Cow Tonic

INFLAMMATION OF THE TONGUE.
℞ No. 45.
Fever Paste
Antiseptic Poultice

INFLAMMATION OF THE JOINTS.
℞ No. 46.
Germ Killer
Badger Balm
Antiseptic Poultice

ITCH.
℞ No. 47.
Germ Killer
Skin Ointment
Cow Tonic

LEAD POISONING.

℞ No. 209.

Laxotonic
Iodide Potassium
½ to 1 dram in drinking water once or twice daily

LEUCORRHOEA OR WHITES.

℞ No. 48.

Breeding Tonic
Antisepto

LUNG FEVER.

℞ No. 41.

Fever Paste
White Liniment
Laxotonic

LUMP JAW OR ACTINOMYCOSIS.

℞ No. 49.

Absorbent
Cow Tonic
Iodide Potassium

MAMMITIS.

℞ No. 34.

Cow Tonic
Badger Balm
White Liniment
(In severe cases use in addition
Antiseptic Poultice
Germ Killer
Disinfectall

MILK BLUE.

℞ No. 50.

Cow Tonic

MILK FEVER OR PARTURIENT PARESIS.

℞ No. 51.

Germ Killer
Milk Fever Remedy
Milk Fever Injector
Laxotonic
Cow Tonic

MILK BLOODY OR STRINGY.

℞ No. 52.

Cow Tonic

NAVEL DISEASES OF CALVES.

℞ No. 53.

Umbilicure

PARALYSIS OF THE BOWELS.

℞ No. 54.

Laxotonic

PARALYSIS OF THE HIND PARTS.

℞ No. 55.

Laxotonic
White Liniment

PINK EYE.

℞ No. 20.

Antisepto
Eye Lotion
Fever Paste
Cow Tonic
Disinfectall

RED WATER IN CATTLE.

℞ No. 56.

Kidney Aid

RHEUMATISM.

℞ No. 57.

Cow Tonic
White Liniment
Antiseptic Poultice

RINGING BULLS.

℞ No. 58.

Healing Oil

RINGWORM.

℞ No. 59.

Cow Tonic
Germ Killer
Skin Ointment

SCOURS IN CALVES.

℞ No. 13.

Calf Cholera Remedy
Disinfectall
Laxotonic

SKIN DISEASE.

℞ No. 60.

Cow Tonic
Germ Killer
Skin Ointment

SLOBBERING.

℞ No. 61.

Fever Paste
Laxotonic

SORE MOUTH.

℞ No. 62.

Antisepto
Fever Paste

SORE THROAT.

℞ No. 63.

Fever Paste
White Liniment
Laxotonic
Antiseptic Poultice

SPRAINS.

℞ No. 64.

Germ Killer
Antiseptic Poultice
Lucky Four Blister

SUNSTROKE OR OVERHEATED.

℞ No. 65.

Fever Paste
Whiskey

SUPPRESSION OF MILK.

℞ No. 66.

Cow Tonic

SURGICAL OPERATIONS AND LEAKY TEAT.

℞ No. 67.

Germ Killer
Healing Oil

TEAT STOPPAGE OR STRICTURE.

℞ No. 68.

Germ Killer
Teat Plug
Badger Balm
Teat Expander
Teat Bistoury

TEAT SORE.
℞ No. 69.
Badger Balm

TEAT WARTS.
℞ No. 70.
Wartine

TUBERCULOSIS IN CATTLE.
℞ No. 71.
Testing Outfit Complete
Disinfectall

TUMORS.
℞ No. 72.
Germ Killer
Absorbent
Healing Lotion

TICKS.
℞ No. 73.
Germ Killer
Skin Ointment
Cow Tonic

ULCERS.
℞ No. 74.
Germ Killer
Absorbent
Healing Lotion

URINE RETAINED.
℞ No. 75.
Catheter

VOMITING.
℞ No. 76.
Cow Tonic
Laxotonic
Stokvigor

WARTS.
℞ No. 77.
Wartine
Healing Lotion

WOUNDS.
℞ No. 78.
Germ Killer
Absorbent
Healing Oil

HORSES

ABORTION IN MARES OR SLINKING OF THE FOAL.
℞ No. 79.
Breeding Tonic
Antisepto
Flushing Outfit

ABSCESS.
℞ No. 80.
Germ Killer
Healing Lotion
(In severe cases use in addition)
Physic Ball
Horse Tonic
Antiseptic Poultice
Absorbent

ASTHMA OR HEAVES.
℞ No. 81.
Physic Ball
Horse Tonic
Heave Powder

AZOTURIA OR PARALYSIS OF THE HIND PARTS.
℞ No. 82.
Colic Drench
Kidney Aid

BARRENNESS IN MARES.
℞ No. 83.
Breeding Tonic
Antisepto
Flushing Outfit

BLOATING.
℞ No. 84.
Colic Drench
(In severe cases use in addition)
Trocar
Germ Killer
Healing Oil

BLOOD POSIONING.
℞ No. 10.
Germ Killer
Healing Oil
Absorbent

BOG SPAVIN.
℞ No. 85.
Absorbent

BONE SPAVIN.
℞ No. 86.
Bone Blister

BROKEN KNEE.
℞ No. 87.
Germ Killer
Healing Oil
Absorbent

BROKEN WIND.
℞ No. 88.
Physic Ball
Horse Tonic
Heave Powder

BRONCHITIS.
℞ No. 89.
Fever Paste
White Liniment
Laxotonic

BRUISES.
℞ No. 90.
Badger Balm
Antiseptic Poultice

BRUISES OF THE FROG.
℞ No. 91.
Antiseptic Poultice

BURNS AND SCALDS.
℞ **No. 92.**
Healing Oil
Badger Balm
Antiseptic Poultice

CALK WOUNDS.
℞ **No. 93.**
Germ Killer
Healing Oil
Absorbent
Antiseptic Poultice

CAPPED ELBOW OR SHOE BOIL.
℞ **No. 94.**
Germ Killer
Healing Oil
Absorbent

CAPPED KNEE.
℞ **No. 95.**
Absorbent
Bone Blister

CAPPED HOCK.
℞ **No. 95.**
Absorbent
Bone Blister

CASTRATION OR CUTTING COLTS.
℞ **No. 96.**
Germ Killer
Healing Oil

CATARRHAL FEVER OR PINK EYE.
℞ **No. 97.**
Physic Ball
White Liniment
Antiseptic Poultice
Fever Paste
Horse Tonic
Germ Killer

CHOKING.
℞ **No. 98.**
Drenching Hook
Colic Drench

COCKED ANKLES.
℞ **No. 99.**
White Liniment

COLD IN THE HEAD.
℞ **No. 100.**
White Liniment
Fever Paste
Horse Tonic

COLIC.
℞ **No. 101.**
Drenching Hook
Colic Drench
Laxotonic
Powdered Mustard

CONSTIPATION.
℞ **No. 102.**
Colic Drench
Laxotonic

CORNS.
℞ **No. 103.**
Antiseptic Poultice
Absorbent

COUGHS.
℞ **No. 104.**
Physic Ball
White Liniment
Fever Paste

CRACKED HEELS.
℞ **No. 105.**
Physic Ball
Horse Tonic
Badger Balm

CRAMPS OF JOINTS.
℞ **No. 106.**
White Liniment
Horse Tonic

CURB.
℞ **No. 107.**
Antiseptic Poultice
Bone Blister
Absorbent

DISTEMPER.
℞ **No. 97.**
White Liniment
Antiseptic Poultice
Fever Paste
Horse Tonic
Germ Killer

DIARRHOEA.
℞ **No. 108.**
Horse Tonic
Calf Cholera Remedy

DROPSY.
℞ **No. 109.**
Physic Ball
Horse Tonic

DYSENTERY.
℞ **No. 110.**
Horse Tonic
Calf Cholera Remedy

ECZEMA.
℞ **No. 111.**
Physic Ball
Horse Tonic
Germ Killer
Skin Ointment

EVERSION OF UTERUS.
℞ **No. 210.**
Fever Paste
Horse Tonic
Antisepto

EYE INFLAMMATION.
℞ **No. 112.**
Eye Lotion
Antisepto

FEVER.
℞ **No. 113.**
Fever Paste
Laxotonic

FISTULA.
℞ **No. 114.**
Antiseptic Poultice
Lucky Four Blister
Germ Killer
Healing Lotion
Absorbent

FLIES.
℞ **No. 115.**
Fly Oil

FOALING.
℞ **No. 116.**
Umbilicure

FOUNDER.
℞ **No. 117.**
Physic Ball
Fever Paste
Horse Tonic
Antiseptic Poultice

GLANDERS.
℞ **No. 118.**
Mallien

GREASE HEEL.
℞ **No. 119.**
Physic Ball
Horse Tonic
Badger Balm
Antiseptic Poultice
Germ Killer

HARNESS OR COLLAR GALLS.
℞ **No. 120.**
Gall Balm
Germ Killer
Absorbent

HEAVES.
℞ **No. 81.**
Physic Ball
Horse Tonic
Heave Powder

HIPPED.
℞ **No. 121.**
Badger Balm
Lucky Four Blister

IMPACTION OF THE BOWELS.
℞ **No. 122.**
Colic Drench
Laxotonic
Mustard

INDIGESTION OR OUT OF CONDITION.
℞ **No. 123.**
Physic Ball
Horse Tonic

INFLUENZA.
℞ **No. 124.**
Laxotonic
Fever Paste
White Liniment
Horse Tonic
Antiseptic Poultice
Germ Killer

KIDNEY DISEASE.
℞ **No. 125.**
Physic Ball
Kidney Aid

LAMENESS.
℞ **No. 126.**
Antiseptic Poultice
Absorbent or Bone Blister

DEEP SEATED LAMENESS.
℞ **No. 127.**
Lucky Four Blister
Germ Killer
Antiseptic Poultice
Healing Oil

LARYNGITIS.
℞ **No. 128.**
Fever Paste
White Liniment
Antiseptic Poultice
Horse Tonic
Germ Killer

LEUCORRHOEA.
℞ **No. 129.**
Breeding Tonic
Antispeto
Flushing Outfit

LICE.
℞ **No. 130.**
Diolice

LUNG FEVER.
℞ **No. 131.**
White Liniment
Fever Paste
Horse Tonic
Germ Killer
Laxotonic

LYMPHANGITIS.
℞ **No. 132.**
Physic Ball
Horse Tonic
Fever Paste
Badger Balm

MANGE.
℞ **No. 111.**
Physic Ball
Horse Tonic
Germ Killer
Skin Ointment

MOON BLINDNESS.
℞ **No. 133.**
Physic Ball
Horse Tonic
Antisepto
Eye Lotion

MOUTH SORE.
℞ **No. 134.**
Healing Oil

NASAL GLEET.
℞ **No. 135.**
Physic Ball
Horse Tonic
White Liniment

NAVEL DISEASE IN COLTS.
℞ **No. 136.**
Umbilicure
Fever Paste
Badger Balm
Antiseptic Poultice

OPEN JOINT.
℞ **No. 137.**
Germ Killer
Lucky Four Blister
Antisepto
Absorbent

PARALYSIS.
℞ **No. 138.**
Colic Drench
Kidney Aid
Laxotonic

PARASITES.
℞ **No. 139.**
Physic Ball
Horse Tonic
Germ Killer
Skin Ointment

PARTURITION.
℞ **No. 140.**
Antisepto
Fever Paste

PHARYNGITIS.
℞ **No. 141.**
Fever Paste
White Liniment
Antiseptic Poultice
Horse Tonic
Germ Killer

PIMPLES.
℞ **No. 142.**
Physic Ball
Horse Tonic
Skin Ointment

PINK EYE.
℞ **No. 97.**
Physic Ball
White Liniment
Antiseptic Poultice
Fever Paste
Horse Tonic
Germ Killer

PLEURISY.
℞ **No. 143.**
Fever Paste
White Liniment

PNEUMONIA.
℞ **No. 131.**
White Liniment
Fever Paste
Germ Killer
Horse Tonic

POLL EVIL.
℞ **No. 144.**
Antiseptic Poultice
Lucky Four Blister
Germ Killer
Healing Lotion
Absorbent

PURPURA HEMORRHAGICA.
℞ **No. 145.**
Physic Ball
Fever Paste
Horse Tonic
Badger Balm
Healing Oil
Healing Lotion

QUARTER CRACK.
℞ **No. 212.**
Lucky Four Blister
Firing Iron

QUITTOR.
℞ **No. 146.**
Germ Killer
Antiseptic Poultice
Absorbent

RING BONE.
℞ **No. 147.**
Bone Blister

RING WORM.
℞ **No. 148.**
Physic Ball
Horse Tonic
Germ Killer
Skin Ointment

ROARING.
℞ **No. 149.**
Lucky Four Blister

RUPTURE.
℞ **No. 150.**
Healing Oil

SCALDS AND BURNS.
℞ **No. 151.**
Badger Balm
Antiseptic Poultice

SCRATCHES.
℞ **No. 152.**
Physic Ball
Horse Tonic
Germ Killer
Badger Balm
Antiseptic Poultice

SHOE BOILS.
℞ **No. 94.**
Absorbent
Lucky Four Blister

SKIN DISEASE.
℞ **No. 111.**
Physic Ball
Horse Tonic
Germ Killer
Skin Ointment

SLOW SIRES.
℞ **No. 211.**
Vigorine

SORES.
℞ **No. 153.**
Germ Killer
Absorbent
Healing Oil

SORE THROAT.
℞ **No. 154.**
White Liniment
Fever Paste
Horse Tonic

SPAVIN.
℞ **No. 85.**
Absorbent for Bog Spavin

℞ **No. 86.**
Bone Blister for Bone Spavin

SPEEDY CRACK.
℞ **No. 152.**
Physic Ball
Horse Tonic
Germ Killer
Badger Balm
Antiseptic Poultice

SPLINTS.
℞ **No. 155.**
Bone Blister

SPRAINS.
℞ **No. 156.**
Antiseptic Poultice
Absorbent
Lucky Four Blister

STERILITY.
℞ **No. 83.**
Breeding Tonic
Antisepto
Flushing Outfit

STRANGLES.
℞ **No. 97.**
Laxotonic
White Liniment
Antiseptic Poultice
Fever Paste
Horse Tonic
Germ Killer

STRING HALT.
℞ **No. 157.**
Physic Ball
Horse Tonic

SUNSTROKE.
℞ **No. 158.**
Fever Paste
Whiskey

SWELLING.
℞ **No. 159.**
Physic Ball
Horse Tonic
Badger Balm
Antiseptic Poultice

SWEENY.
℞ **No. 160.**
Lucky Four Blister
White Liniment

SYNOVITIS.
℞ **No. 161.**
Badger Balm
Antiseptic Poultice
Lucky Four Blister

TENDON SORE.
℞ **No. 162.**
Badger Balm
Antiseptic Poultice
Lucky Four Blister

THOROUGHPINS.
℞ **No. 163.**
Absorbent

THRUSH IN FEET.
℞ **No. 164.**
Antiseptic Poultice
Germ Killer
Physic Ball
Horse Tonic

TUMOR.
℞ **No. 167.**
Absorbent

ULCERS.
℞ **No. 166.**
Germ Killer
Healing Lotion
Absorbent

URINE RETAINED.
℞ **No. 167.**
Catheter
Colic Drench

WARTS.
℞ **No. 168.**
Wartine

WIND BROKEN.
℞ **No. 81.**
Physic Ball
Horse Tonic
Heave Powder

WIND GALLS.
℞ **No. 169.**
Absorbent

WIRE CUTS.
℞ **No. 170.**
Germ Killer
Healing Oil
Absorbent

WORMS.
℞ **No. 171.**
Worm Powder
Physic Ball
Germ Killer

WOUNDS.
℞ **No. 172.**
Germ Killer
Healing Lotion
Absorbent

SWINE

ABORTION IN SOWS.
℞ No. 174.
Breeding Tonic
Antisepto
Disinfectall
Flushing Outfit

APOPLEXY OR STAGGERS.
℞ No. 190.
Laxotonic

CANKER OR SORE MOUTH.
℞ No. 200.
Germ Killer
Healing Oil

CASTRATION.
℞ No. 173.
Healing Oil

CATARRHAL FEVER.
℞ No. 201.
Hog Tonic
White Liniment
Fever Paste
Disinfectall

CONSTIPATION.
℞ No. 202.
Laxotonic
Badger Balm

DIARRHOEA.
℞ No. 175.
Disinfectall
Calf Cholera Remedy

HOG CHOLERA.
℞ No. 176.
Hog Tonic
Disinfectall

LICE ON HOGS.
℞ No. 179.
Disinfectall
Diolice

MANGE.
℞ No. 203.
Germ Killer
Skin Ointment
Disinfectall
Hog Tonic

MEASLES.
℞ No. 204.
Worm Powder
Hog Tonic

PARALYSIS.
℞ No. 205.
Laxotonic
White Liniment
Worm Powder

QUINSY.
℞ No. 206.
Fever Paste
White Liniment
Laxotonic
Germ Killer

RHEUMATISM.
℞ No. 207.
Laxotonic
White Liniment

THUMPS.
℞ No. 177.
Hog Tonic

WORMS.
℞ No. 178.
Hog Tonic
Worm Powder

SHEEP

DISTEMPER.
℞ No. 180.
Sheep Tonic
Disinfectall

GRUBS IN THE HEAD OF SHEEP.
℞ No. 181.
Sheep Tonic
Disinfectall

INDIGESTION.
℞ No. 182.
Sheep Tonic

INTESTINAL WORMS.
℞ No. 183.
Worm Powder

LUNG WORMS.
℞ No. 184.
Worm Powder
Disinfectall

POULTRY

CATARRHAL OR DIPHTHERIC ROUP.
℞ No. 185.
Poultry Roup Paste
Disinfectall
Poultry Tonic

BRONCHIAL ROUP.
℞ No. 186.
Poultry Roup Paste

CANKER.
℞ No. 187.
Poultry Roup Paste
Disinfectall

CHICKEN POX.
℞ No. 188.
Disinfectall
Poultry Roup Paste

CHOLERA.
℞ No. 189.
Poultry Cholera Medicine
Poultry Tonic

CROP BOUND.
℞ No. 190.
Poultry Tonic

DIARRHOEA.
℞ No. 191.
Poultry Cholera Medicine

GAPES.
℞ No. 192.
Poultry Tonic

LEG WEAKNESS.
℞ No. 193.
Oil of Camphor
Iodide Potassium
Poultry Tonic

LICE.
℞ No. 194.
Disinfectall
Diolice

MOULTING.
℞ No. 195.
Poultry Tonic

PIP.
℞ No. 196.
Tincture of Aconite
Poultry Roup Paste
Disinfectall

ROUP.
℞ No. 197.
Disinfectall
Poultry Tonic
Poultry Roup Paste

WORMS.
℞ No. 198.
Worm Powder
Epsom Salts

Poultry Scene on Farm.

APR 1 1913

Dr. David Roberts and his Arabian Team.

Fig. 5. Attendant administering Hypodermic injection to cow in chute in barnyard. Flushing tank in readiness to cleanse genital organs with Antisepto Solution.

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